

The **CHEMIST AND DRUGGIST**

For Retailer, Wholesaler and Manufacturer

APRIL 13 1957

Powerful nation-wide

ADVERTISING ...



ALL EYES ON

Optrex

plus your **DISPLAY** *for bigger sales!*



KELDON LIMITED • PERIVALE • MIDDLESEX

SMITH
OF EDINBURGH

CAFFEINE

Caffeine Alkaloid B.P. (Hydrous and Anhydrous), Caffeine Citrate B.P.C. and Caffeine Sodium Iodide B.P.C.

CHLOROFORM

Chloroform for all purposes—anaesthesia, confectionery manufacture and technical use.

CITRATES

Iron and Ammonium Citrate B.P., Potassium Citrate B.P. and Sodium Citrate B.P.—delivery from stock; competitive prices.

ETHER

Anaesthetic Ether B.P., Solvent Ether B.P. and Technical Ether, available in bottles, tins or bulk.

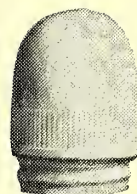
MORPHINE

Acetate, Alkaloid, Hydrochloride, Sulphate and Tartrate, offered subject to D.D. regulations.



T. & H. SMITH LTD · BLANDFIELD CHEMICAL WORKS · EDINBURGH 11

order new and better



BENZEDREX INHALER

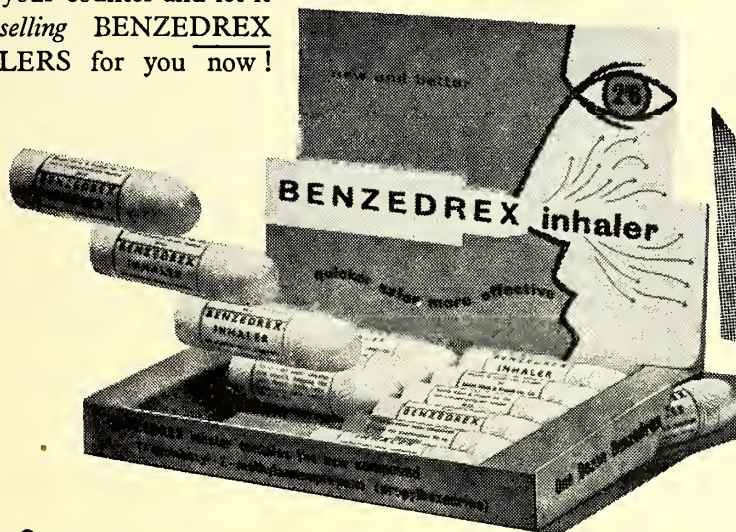
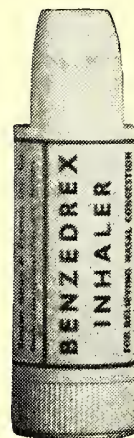
IN COMPLETE DOZENS

and send your sales and profits soaring!

When you order new and better **BENZEDREX INHALER** in complete dozens you get your Inhalers packed in the attractive new Display Pack—ready for work as your silent salesman. This hard-hitting point-of-sale display stimulates 'impulse buying' and gives your profits a double boost. Here are two good reasons why:

- 1 With each Display Pack dozen you get an extra **FREE** inhaler—thirteen for the price of twelve. Your normal profit margin is increased.
- 2 You sell more Inhalers than ever before—and each Display Bonus sale brings you the bigger Display Bonus Profit.

Display Bonus Terms increase your *profit*: the Display Pack multiplies your *sales*. Set the Pack up on your counter and let it start *selling* **BENZEDREX INHALERS** for you now!



AN  **PRODUCT**

Smith Kline & French Laboratories Ltd., Coldharbour Lane, London SE5

NEW!

Johnson's FOOT POWDER

SOOTHES! RELIEVES PAIN!
STOPS IRRITATION!
DEODORANT! FUNGICIDAL!

Clinical trials conducted on people whose jobs involved much standing and walking showed that 95% enjoyed foot comfort after using Johnson's Foot Powder.

In attractive polythene spray-tubes for easy application.

Retail price 2/6 per tube in display cartons of half a dozen.



Profit from this brand-new product by

Johnson & Johnson

THE WORLD'S MOST TRUSTED NAME IN SURGICAL DRESSINGS





By Appointment to H.M. The Queen
Manufacturers of Vacuum Vessels

1 9 5 7

Special Golden Jubilee Year Offer

from **THERMOS**
REGISTERED TRADE MARK

IF THEY SEE 'EM...

So here's your chance to give your customers still MORE incentive to buy Britain's best-selling vacuum flasks... THERMOS Brand! There's a model for every need—from the pocket size Minor to the big-capacity Family Flask. Display them all together... and watch your sales go UP!

THEY'LL BUY 'EM!

THIS SPECIALLY DESIGNED DISPLAY UNIT

- holds one of each size Thermos Brand flask, either No. 14 or 15 range.
- wins you still greater sales of this best-selling line
- is offered FREE in the 'Jubilee Flask Parcel'*

*THE THERMOS

'JUBILEE FLASK PARCEL' IS MADE UP OF THIS SELECTION OF

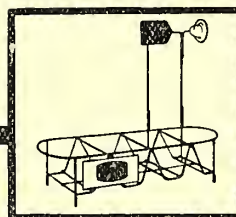
BEST-SELLING THERMOS BRAND MODELS:

'WORLD' FLASK SERIES 15 (1) 2 x 15½ (Minor)
fitted with polythene (2) 12 x 15 (Standard)
pouring lip and lock-on (3) 1 x 1515 (Major)
polythene stopper (4) 2 x 15Q (Family)

STANDARD FLASK SERIES 14 (5) 2 x 14½ (Minor)
fitted with special (6) 13 x 14 (Standard)
polythene non-drip (7) 1 x 1414 (Major)
pouring lip (8) 2 x 14Q (Family)

JUG MODEL 65 (9) 2 x 65
a graceful, efficient vacuum jug at a price everyone can afford

	List Price	Purchase Tax	Selling Price
	£. s. d.	£. s. d.	£. s. d.
2 x 15½ flasks (1)	11. 8	2. 8	14. 4
12 x 15 " (2)	3. 17. 0	18. 0	4. 15. 0
1 x 1515 " (3)	9. 7	2. 2	11. 9
2 x 15Q " (4)	1. 3. 0	5. 4	1. 8. 4
2 x 14½ " (5)	10. 6	2. 5	13. 0
13 x 14 " (6)	3. 16. 11	17. 4	4. 14. 3
1 x 1414 " (7)	8. 9	2. 0	10. 9
2 x 14Q " (8)	1. 1. 6	4. 10	1. 6. 4
2 x 65 " (9)	1. 4. 0	5. 5	1. 9. 6
	£13. 2. 11	£3. 0. 2	£16. 3. 3



Order the
JUBILEE FLASK PARCEL
through your usual wholesaler

N.B.:

The special display unit is supplied FREE only as part of the Jubilee Flask-Display Parcel. IT IS ALSO AVAILABLE AS A SEPARATE ITEM FOR THE NOMINAL CHARGE OF 10/-, carriage paid from your wholesaler.

THERMOS
REGISTERED TRADE MARK

— the reliable brand of vacuum vessels
A RANGE OF OVER 40 FLASKS, JUGS, JARS & BOWLS TO CHOOSE FROM

P. S. HEAVY THERMOS NATIONAL ADVERTISING BREAKS EARLY JUNE



Now — all the comfort and protection that comes from years of research and consumer testing. The finest sanitary towel ever produced — and at the right price for big sales.

1/1 per box of 6

2/- per box of 12

LOOK

*Free Cinema Seats
for you*

You who sell Modess With Cotton Wool across the counter will find inside the top flap of every 4-gross carton a voucher for **TWO FREE SEATS AT YOUR LOCAL A.B.C. CINEMA** (and one free seat in every 2-gross carton). This scheme operates until further notice.

STOCK UP NOW

Sell Modess with Cotton Wool —
the best towel on the market.

Johnson & Johnson

PERSONAL PRODUCTS DIVISION · SLOUGH · BUCKS

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The appeal of . . .



By Appointment
to H.M. The Queen
Toilet Soap Makers



By Appointment to
H.M. Queen Elizabeth
the Queen Mother.
Toilet Soap Makers

Roberts' Original BROWN WINDSOR SOAP

The appeal of ROBERTS Original BROWN WINDSOR Toilet Soap to many of your customers will be the tradition behind it — the formula unchanged since Regency days. To many it will be the unique and refreshing 'old world' perfume, which has never been successfully imitated. To many also the boxes, with their beautiful design and lettering, will have their own appeal.

To ALL ROBERTS Original BROWN WINDSOR appeals as one of the best toilet soaps in the world.

ROBERTS WINDSOR SOAP CO. LTD.

The Acre, Windsor,
and Victoria Soap Works, Colwick, Nottingham

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Introducing *Skin Soft*

A soothing and emollient

Skin Cream for Rough

Hands, Napkin Rash,

Chafing, Irritation,

Sunburn, Heat Spots,

Pimples, etc.

CALAMINE SKIN CREAM

Packed in attractive display outers containing 2 dozen tubes retailing at 1/6d. per tube.

Trade terms 20/- plus 6/-

Purchase Tax per

2 dozen outer.

Order now and display this counter 'selling' line



THE CROWN CAPSULE CO. LTD., HELENSBURGH, SCOTLAND

New heavy National Advertising

for
Personality
TURTLE OIL SOAP

Starting May 13th, large-space advertisements for Personality Turtle Oil Soap will appear in:

- DAILY EXPRESS
- DAILY MIRROR
- DAILY MAIL
- DAILY HERALD
- NEWS CHRONICLE
- DAILY SKETCH

Total circulation over
15,000,000

A Dry Skin's 3 Foes



—and its best friend

Personality
TURTLE OIL SOAP

Miniature reproduction of the first National Advertisement

DAY BY DAY your skin becomes drier, more sensitive, more vulnerable to the ageing effects of sun, wind and cold. Day by day the lines of your face and neck harden, wrinkles come nearer to being a worry. Day by day Personality Turtle Oil Soap combats the 3 foes of a dry skin, softens the lines, keeps the wrinkles delicate skin needs the daily soothing help of the soap that is superfatted with Turtle Oil, the essential ingredient to protect a dry skin. Get a tablet now... at a Chemist's or Department Store, price 1/- (or 2/- for the large bath size).

Personality
TURTLE OIL SOAP

Made specially to guard a dry skin

★ Don't miss this Bonus Offer!

★

This offer
remains open
until
June 15th

A special Display Discount of 7½% (plus 2½% for cash within 28 days) will be allowed on all orders to the value of £5 or over (excluding P.T.) for Personality Turtle Oil products. This discount is conditional on your displaying Personality products, and for this purpose each Bonus Parcel will include, free of charge, an attractive new sell-out Display Stand in full colour. Compile your order from this list (*Trade Prices subject to P.T.*):

Turtle Oil Soap, toilet size	91/-	per gross,	retailing at	1/1
Turtle Oil Soap, bath size	182/-	" "	" "	2/2
Turtle Oil Skin Food	24/7	per doz.	" "	4/10
Turtle Oil Foundation Cream	24/7	" "	" "	4/10
Turtle Oil Hand Cream	30/-	" "	" "	5/10

Order your Bonus Parcel now, direct from
Personality Beauty Products Ltd., Ashby-de-la-Zouch, Leics.

TAN-GLO

THE VELVETY—
EASY-ON-THE-SKIN

SUN TAN CREME

New, fresh stocks of this
successful line are now
available.

Write to us for a sample tube.

Excellent Formula

Modern Pack

ARTHUR H. COX & CO. LTD.

Manufacturing Chemists since 1839

BRIGHTON • ENGLAND

CARTONED TUBES PACKED
IN SHOWOUTERS OF 1 DOZEN

Price 9/6 per dozen tubes
Plus 90% P.T.

GROSS ORDERS AT 9/- PER DOZ.

DISPLAY MATERIAL AVAILABLE

See ALBRO for Fillers & Cappers

THIS JUNIOR MODEL FILLS
1,000 BOTTLES PER HOUR

Bottles ranging from 1 oz. to 4 ozs. can be filled to a pre-determined level at approximately 8-10 gross per hour **without spill, drip or wastage.** Filling costs are reduced to a new low minimum.

ALBRO vacuum operated machines fill all liquids and semi-liquids, including oils, emulsions, acids, perfumes, syrups and spirits. ALBRO fillers can be easily and quickly cleaned when changing from one product to another.

Ask for full details, or a demonstration, of the Single Head Junior and the many larger models for liquids or powders.

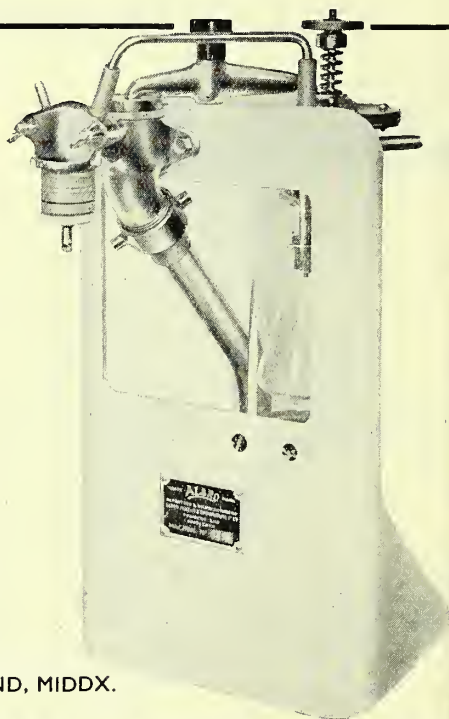
ALBRO Filling Machines

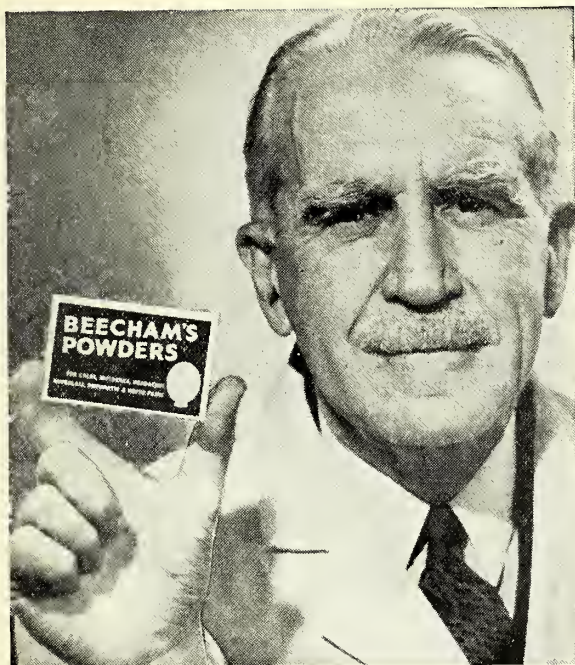
For Liquids, Powders & Pastes

ALBRO FILLERS & ENGINEERING CO. LTD., WHARF ROAD, PONDERS END, MIDDX.

Telephone : Howard 2622 (5 lines)

Telegrams : Albromach, Enfield.



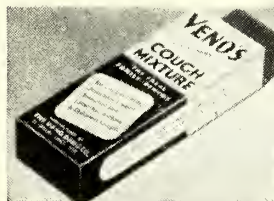
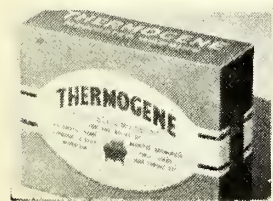
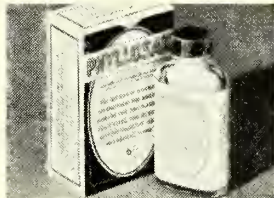
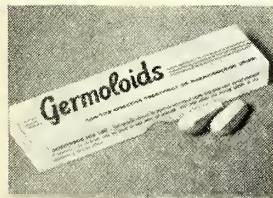


Nationally advertised profitable lines

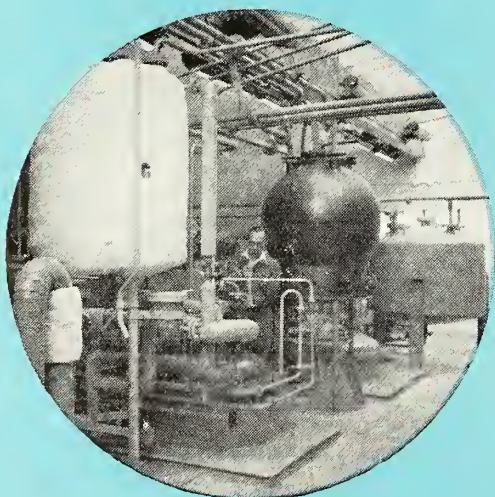
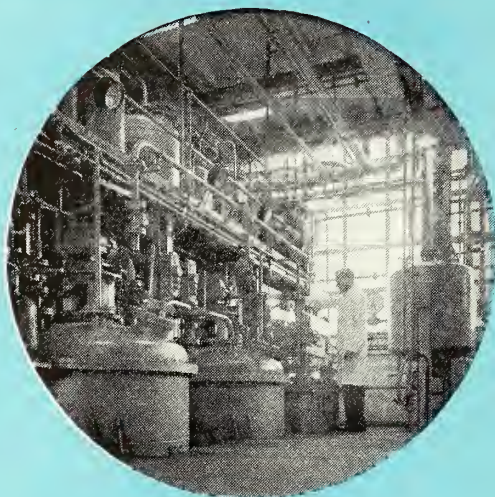
It will pay you, all the year round, to keep up your stocks of these nationally advertised and PROFITABLE lines.

Combined parcel brings best display terms

A combined parcel (sorted to your requirements) of these widely used QUICK sellers brings you best Display terms. Order now—send your enquiries to:—



BEECHAM PHARMACEUTICALS LTD
ST HELENS · LANCs



FOR **BAR**

ALLOBARBITONE B.P.C.

ALLYLISOPROPYLBARBITURIC ACID

AMYLOBARBITONE B.P.C.

AMYLOBARBITONE SODIUM B.P.C.

BARBITONE B.P.

BARBITONE SODIUM B.P.

CYCLOBARBITONE B.P.C.

CYCLOBARBITONE CALCIUM

HEXOBARBITONE B.P.

HEXOBARBITONE SODIUM B.P.

METHYLPHENOBARBITONE B.P.

PHENOBARBITONE B.P.

PHENOBARBITONE SODIUM B.P.

QUINALBARBITONE

QUINALBARBITONE SODIUM B.P.

SEC-BUTOBARBITONE

SEC-BUTOBARBITONE SODIUM

*Readily available
from stock*

WE INVITE ENQUIRIES
FOR ANY BARBITURATES

BARBITURATES

—specify **M&B**



M&B is a brand to rely on for chemicals with a complete fitness for pharmaceutical purposes. And you will find our barbiturates entirely suitable for tablet-making.

Some views of our new plant are reproduced opposite. This is of the most modern design and, representing production facilities of the first order, enables us to meet your barbiturates requirements immediately from stock. Make a point of specifying **M&B** brand Barbiturates.

MANUFACTURED BY

MAY & BAKER LTD

DAGENHAM • ENGLAND

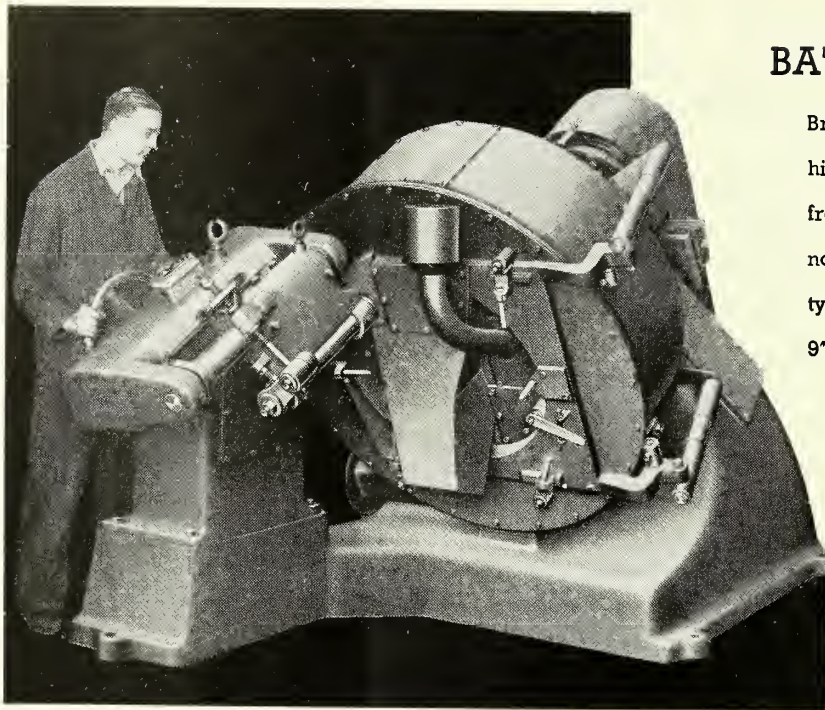
Telephone : ILFord 3060 Extension 317

ASSOCIATED HOUSES IN: BOMBAY • LAGOS • MONTREAL

PORT ELIZABETH • SYDNEY • WELLINGTON

BRANCHES AND AGENTS THROUGHOUT THE WORLD





BATCH PRODUCTION

Broadbent's electrically driven high-speed Centrifugals process freely filtering materials and non-filtering slurries, and with types and sizes ranging from 9" to 72" basket diameter are ready to solve your separating problems quickly and efficiently

Technical advice on receipt of enquiry

PHONE 5520/5

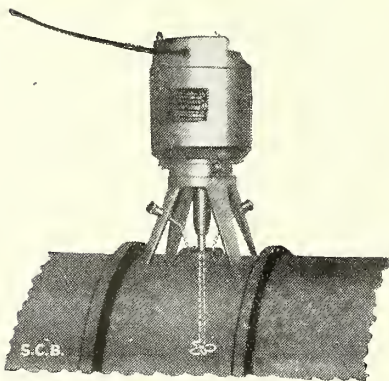
THOMAS BROADBENT & SONS LTD HUDDERSFIELD

EFFICIENT

STIRRERS

FOR
LABORATORY
PILOT PLANT
AND
PRODUCTION

Model SC.G Low Speed, and S.C. High Speed, for up to 1,000 gallons capacity.



Model SC.B, with folding rotors, for mixing in transport drums.

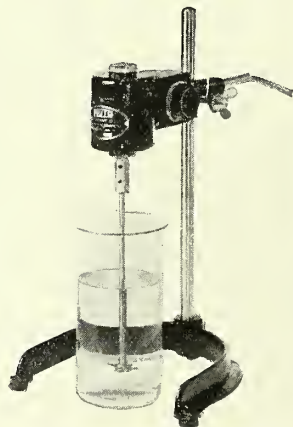
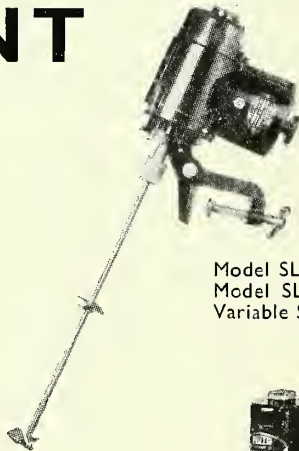
FLUID

**EQUIPMENT
COMPANY LTD.**

9, DORCHESTER COURT,
SOUTHGATE, N.14.

Tel.: BARnet 6236 BOWes Park 5530

Model SL. 1-C. 5/10 gals.
Model SL. 2. 10/20 gals.
Variable Speed Motors.



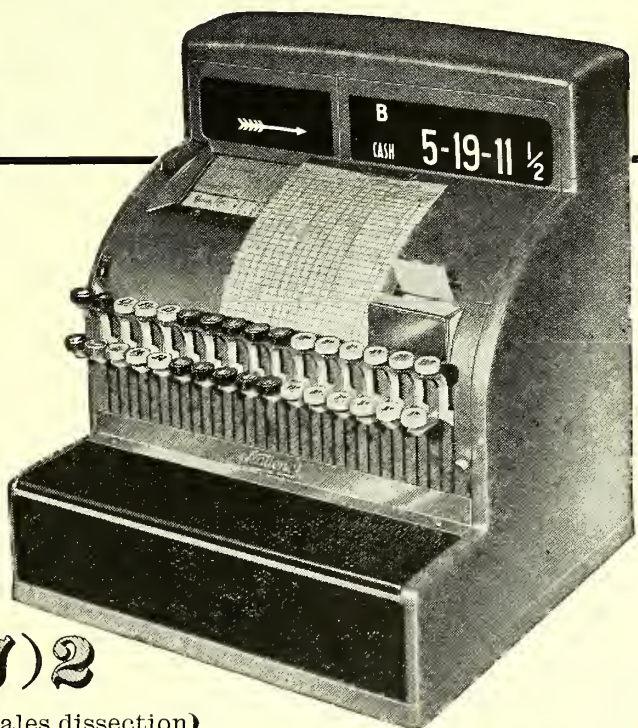
SL.A-U. capacity up to 2 gals.
SL. 1-U. capacity up to 5 gals.
Variable Speed Motors.



SECURITY

'SECURITY FIRST' is the only safe and fair policy where cash is handled and accounts are kept. In the absence of a fully protective and informative system of Receipts and Payments Control, costly errors will always occur.

Temptation threatens and doubt disarms authority. The vigilant National—all-observing, all-recording, all-remembering and all-revealing makes profits safe and systems sound.



▶ **BOLD**, white on black, wide-angle **indication**—reading left to right, front and rear.

▶ **AUTOMATIC, permanent record** of all transactions: Last 9 items always visible.

▶ **AUTOMATICALLY PRINTED customers purchase record**

Model no. 132(7)2

(Two-totals — printed — for sales dissection)

5 YEARS GUARANTEE ★ NATION-WIDE AFTER SALES SERVICE

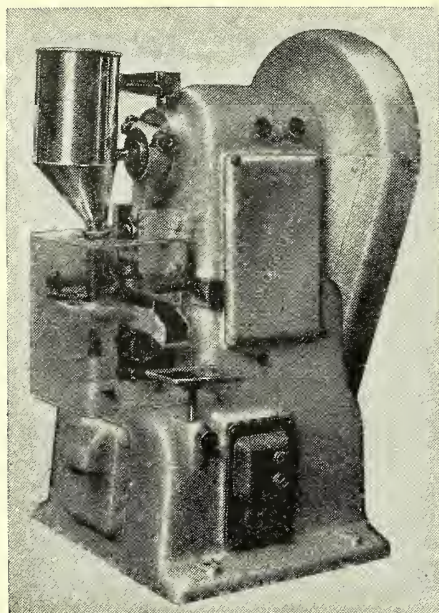
TRUST ALL YOUR TAKINGS TO THE VIGILANT



THE NATIONAL CASH REGISTER COMPANY LTD.

THE NATIONAL CASH REGISTER COMPANY LTD. 206-216 Marylebone Road, London, N.W.1. PADDINGTON 7070





New LB.I. Type Bench Tabletting Machine

ROTARY and SINGLE PUNCH TABLETTING MACHINES

OINTMENT MIXING and GRINDING MILLS

PUNCHES AND DIES FOR ALL TYPES OF TABLETTING MACHINES

Presses and Moulds for
Gelatine Capsules



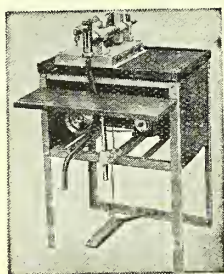
S. W. WILKINSON & CO., LTD.
WESTERN ROAD, LEICESTER

Telephone: Leicester 21283.

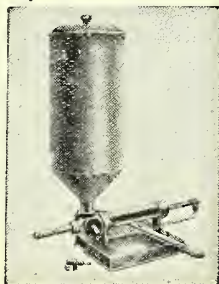
Telegrams: Wilkinson, Leicester 21283

Engineers and Specialists in Pharmaceutical Machinery for over 50 years.

From our range of FILLING MACHINES

Power-driven
Volumetric Liquid
Filling Machine. ▲No. 4. Hand-operated
Tubes, Pots and Jars
Filling Machine. ►

Please write for particulars of our comprehensive range of Filling Machines. We undertake to adapt our machines to individual requirements.



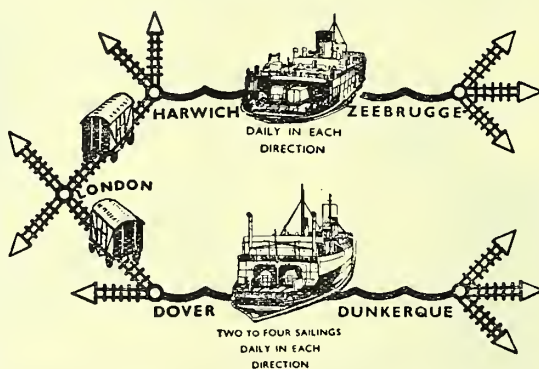
THE
"CENTRAC"
MACHINES

THE BANISTER STREET WORKS LTD

18a, b, c, De BEAUVOIR ROAD, LONDON, N.1

Telephone: CLIssold 0828

MERCHANDISE
MAY BE FORWARDED
IN THROUGH WAGONS
BETWEEN
GREAT BRITAIN & THE CONTINENT
BY TRAIN FERRY
SAVES TIME · PACKING · HANDLING



Full particulars from Continental Superintendent, Victoria Station, London, S.W.1, for Dover route, and from Continental Traffic & Shipping Manager, Harwich House, 129 Bishopsgate, London, E.C.2, for Harwich route.

BRITISH RAILWAYS

THIS IS **AUTOMATION!**

The Remarkable New BEM model Ertma Envelope or Wallet filling Machine is the last, but by no means the least, important link to any Office or Factory mechanisation.



Increases output of Office and Factory at speeds hitherto believed impossible.

Collates and inserts up to 6 enclosures into wallets or even open window envelopes with or without tucked-in flaps and seals, counts, marks and stacks them at a speed of 3,500 filled envelopes or wallets per hour.

Reliable, easy to operate and adjust for enclosures of various sizes and thicknesses and priced to pay for itself in a few months; this machine must be seen to be believed.



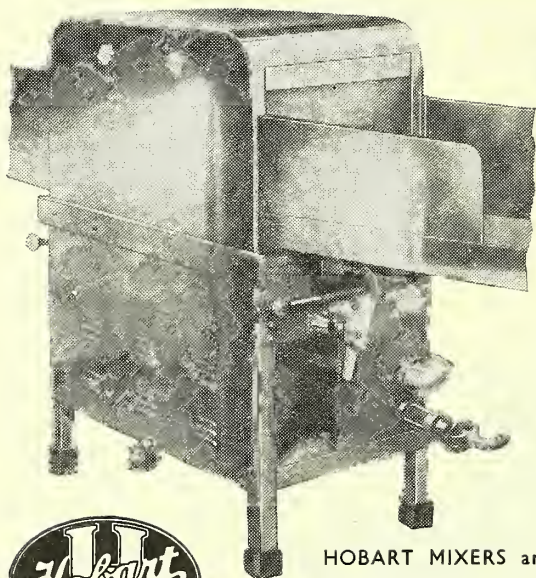
Take your packing, mailing or addressing problems to:—

Business Efficiency Machines Ltd.

(The Adras Addressing Machine and Paper Handling People)

16 Douglas Street, London, S.W.1

Telephone: TATe Gallery 3670

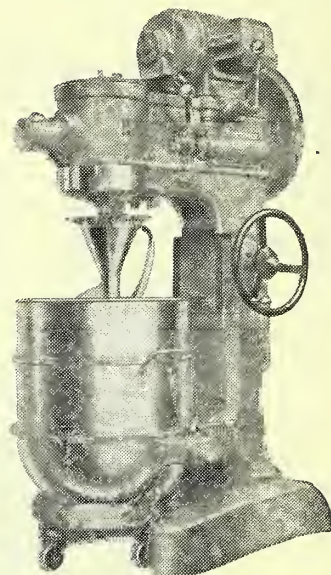


WASHERS & MIXERS

OF OUTSTANDING EFFICIENCY AND RELIABILITY . . .

THE HOBART WASHER (left) will meet the requirements of most large establishments where the utmost cleanliness of metal containers is essential. Fully automatic, it washes at 140°F, rinses at 180°F, under pressure. Full details on request.

HOBART MIXERS are renowned for their high performance and trouble-free service. Six bench and floor models are available—capacities 10, 12½, 20, 30, 50 and 80 quart. Write for details of the full range.



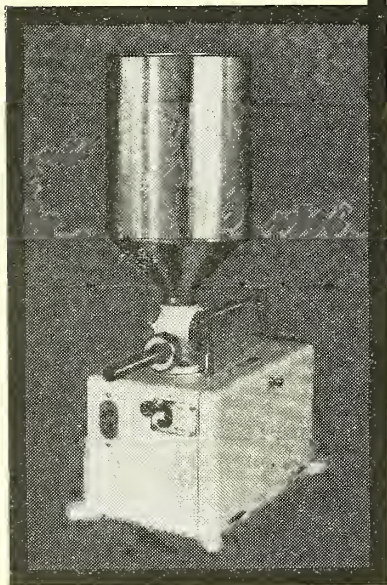
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HOBART CORNER, NEW SOUTHGATE, LONDON, N.11. Telephone: ENTerprise 1212

Divisional Offices and Service Depots at:

BELFAST 45770. BIRMINGHAM: Midland 0715. BRISTOL 20208. CARDIFF 30546. DUBLIN 77212. GLASGOW: Shettleston 3471/2. LEEDS 27665. LIVERPOOL: Royal 3254. MANCHESTER: Ardwick 1169. NEWCASTLE-on-TYNE: Low Fell 7-5279. NOTTINGHAM 84771.

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Here is the new Flexifiller designed for the rapid handling of small-scale tube filling orders. Electric drive eliminates operator fatigue and gives twice the output of a hand-operated machine. All contact parts of stainless steel. Interchangeable pistons and easy adjustment enable the Flexifiller to fill a wide range of sizes with high accuracy. Suitable for tubes, jars, tins or bottles.

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- ★ FOUR COLOURS
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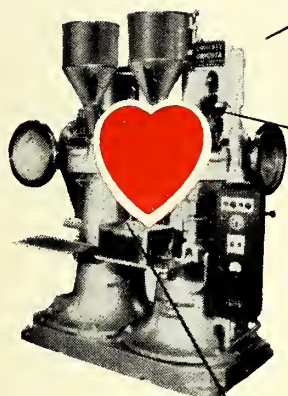
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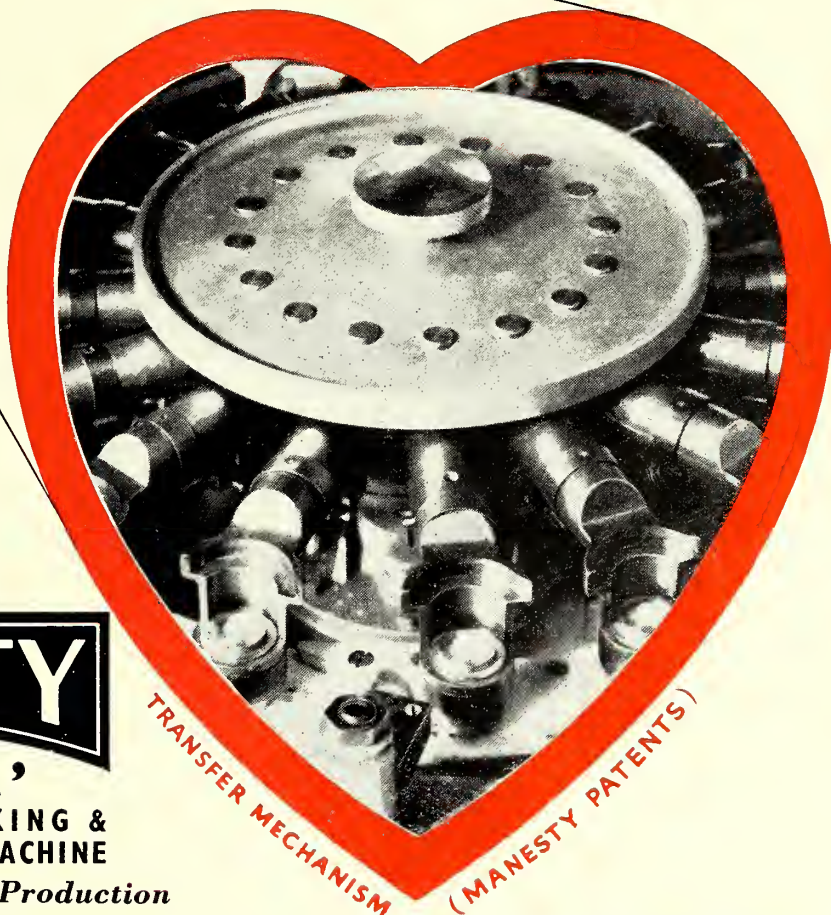
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Ensures that **CORES** (made and coated simultaneously) can be **SOFTER** resulting in :

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It's a profitable business selling the **HALEX** range of nurseryware!

Here's why. First, Halex nurseryware is so attractively gift-packed that it well nigh sells itself. Second, customers already know and trust the famous Halex name. And third, the exceptionally high quality of each Halex

article recommends the rest of the Halex range. Sell one — and you've a steady, sure source of profit in other Halex sales.

Hygienic Halex nurseryware offers a range of warm, gay baby colours — single items or matching sets.

YOU CAN BE SURE YOU'LL SELL HALEX NURSERYWARE

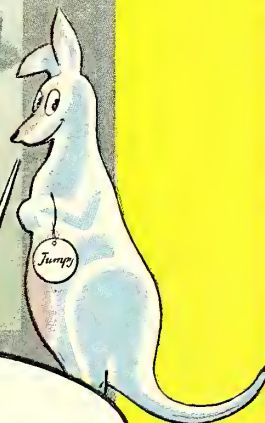
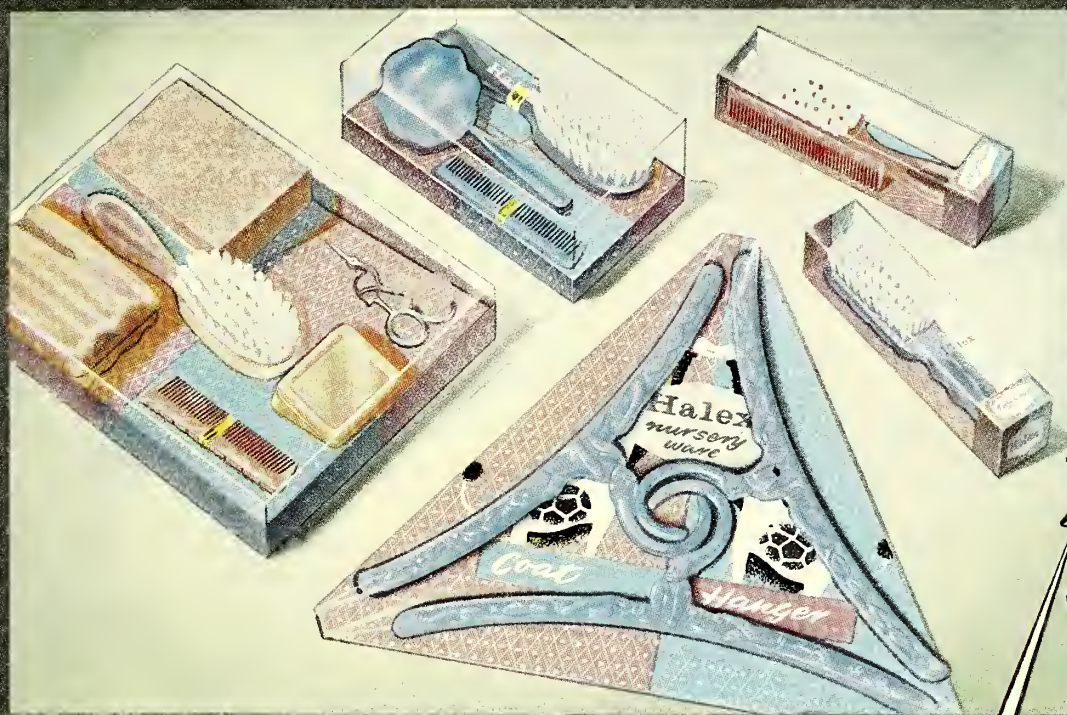
Halex feeding ware is made
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—to sell on sight!



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Children love the colourful, specially designed nursery chambers.

Just 18 days left to cash in on your

5% Bonus Discount

This year, *all* orders for Cooper's Household Aerosol, FRESH-aire and MOTH-aire for delivery before April 30th carry a 5% BONUS DISCOUNT. Sales of these products rocketed last year, and in 1957 more powerful advertising is to be carried out, ensuring that demand continues to increase. Make sure you have your supplies in advance to meet this demand. Make sure you secure your 5% Bonus Discount. Order NOW !

COOPER'S
HOUSEHOLD AEROSOL
FRESH-aire ★ MOTH-aire



1957 sizes and retail prices are
COOPER'S HOUSEHOLD AEROSOL:
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Confidence can easily
be established, and assurance
made doubly sure for every
purchaser by installing
a Rendell display.

Rendells

Why not?

Literally hundreds of women write to us because they have difficulty in obtaining these popular, fast-selling preparations. Why not let them spend their money in your shop—instead of on stamps and stationery?

1 Rilling **Life** Lacquer



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2 Rilling **All Purpose Barrier Cream**

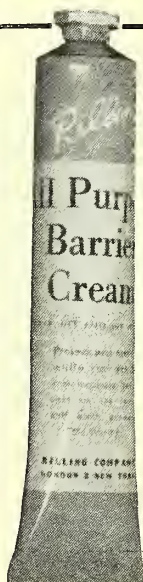
A lanolised cream for wet and dry work . . . gives complete protection against penetration of the skin by dirt and liquid irritants. Leaves the skin soft, smooth and white. Application and removal are simple; full instructions with each handy, hygienic tube. You buy Rilling All Purpose Barrier Cream at 25/3 and 43/4 a dozen (inc. P.T.) and retail at 2/11, or family size tube 5/-.

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your customers
—stock and display

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rheumatic and nerve pains.

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and catarrh - sell them

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REGD. TRADE MARK

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the *proved* remedy

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come in attractive counter
display box for

MORE SALES — MORE PROFIT

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**I.C.I. don't make
houseware but
they do make
'Alkathene'**

POWERFUL NATIONAL ADVERTISING has made 'Alkathene' a household word. But many people are a bit confused about it. They think that I.C.I. manufacture houseware. Actually, of course, they make the 'Alkathene' from which the best houseware is made.

Advertising in the national press, women's magazines and in the cinema tells your customers that 'Alkathene' is light, bright, long-lasting, easy to clean and practically unbreakable. Each advertisement also carries the famous 'Alkathene' label. As a result of all this, more and more women will be asking for houseware made from 'Alkathene'.

Get your share of this growing market. Check that your stocks are sufficient and tie in with the national campaign.

'ALKATHENE'



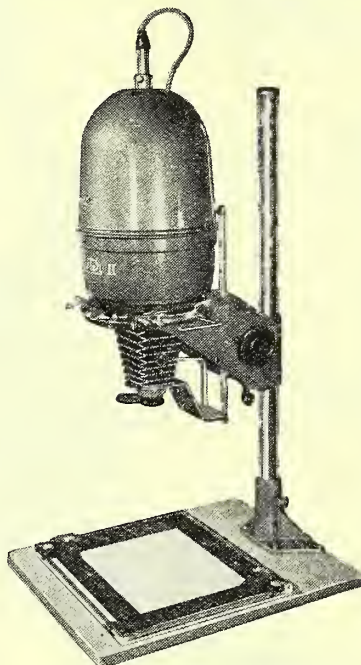
FREE WINDOW BILLS AND CROWNERS

to link your shop with 'Alkathene' national advertising, are available on application through your usual trade channels or direct to Publicity Dept., Plastics Division, Imperial Chemical Industries Ltd., Black Fan Road, Welwyn Garden City, Herts. Shelf cards can be obtained from individual manufacturers. 'Alkathene' is the registered trade mark for the polythene manufactured by I.C.I.





NEW SERIES II ENLARGERS



151E MASTER II ENLARGER

The latest model Master II enlarger with fully enclosed arm casting, quick release on column and choice of negative carrier.

Price, from **£23.9.7**

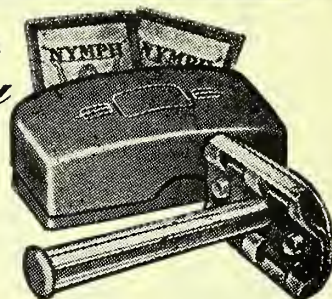
THE LATEST RANGE OF GNOME ENLARGERS EMBODIES MANY ATTRACTIVE NEW FEATURES: NEW, MODERN LAMP-HOUSE, CHOICE OF ADJUSTABLE MASKING OR STANDARD NEGATIVE CARRIER, RANGEFINDER FOCUSING.

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LIMITED
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A Gift a Woman gives Herself...

*counter
display
ensures
quick
sales*



Nymph

*ladies'
safety razor*

Backed by national
advertising



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Obtainable from your usual wholesaler.

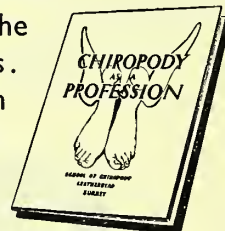
A PRECISION-MADE **SOUPLEX** PRODUCT

SOUPLEX LTD., MORECAMBE, LANCs.

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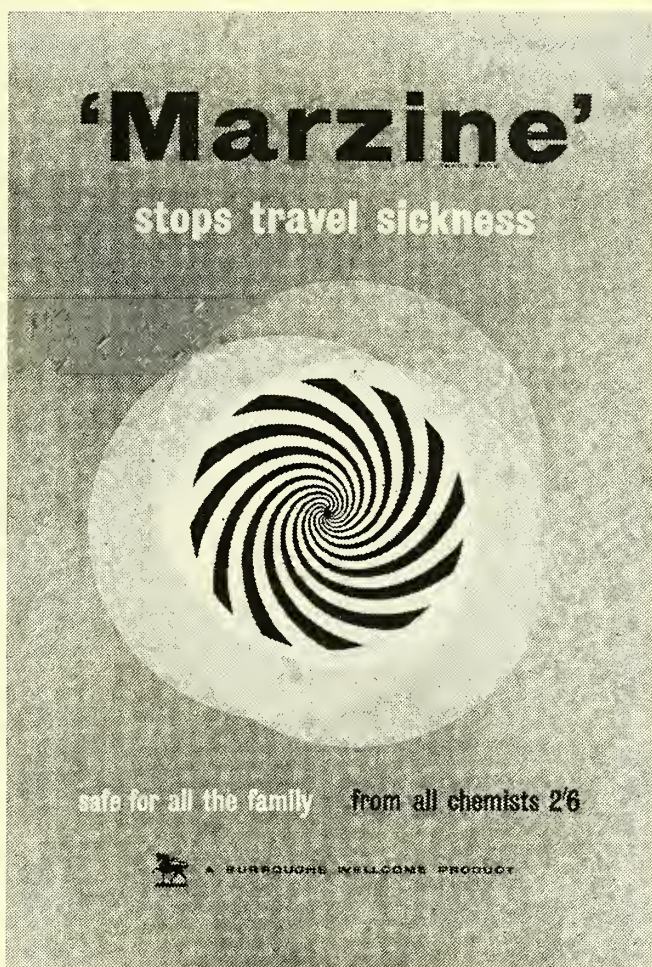
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CHIROPODY is an interesting profession with unlimited prospects. It is not available under the N.H.S., and exceptionally good returns are obtained by the qualified practitioner. There exists a national shortage of chiropodists, and the demand increases. Much of the study can be taken by correspondence.



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Millions of travellers will see this striking poster on the London Underground this summer... millions more will see it on selected railway stations... and millions more again will see advertisements for 'Marzine' in national newspapers and magazines. Hitch *your* wagon to the 'Marzine' star—by displaying and promoting 'Marzine'. Our representative will be glad to show you the attractive new range of 'Marzine' sales aids.

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Touch and GO...

REACH the pain-spot YOURSELF
with the **RALGEX Embrocation Stick**

if its pain caused by
**BACKACHE, LUMBAGO, STIFF NECK,
NEURALGIA, RHEUMATISM,
AND STRAINED MUSCLES,**

just a touch of the Ralgex stick gives immediate relief by promoting a warming, soothing, comforting glow. The powerful medicaments in Ralgex penetrate the deeper skin layers to reach the nerve centres, giving almost immediate ease and relaxation, thus affording freer movement of muscles. Also a valuable counter-irritant for laryngitis, bronchitis, etc.




Apply Ralgex yourself, at the right angle, exactly where the pain is: the back, neck, hips, limbs, or over an area



Ralgex
THE SOLID EMBROCATION
in Handy Stick Form
for cleanliness and convenience, and easy self application. Available from all Chemists.
PHARMAX LTD., GRAVEL HILL, BEXLEYHEATH, KENT



A PHARMAX PRODUCT

These advertisements are regularly appearing in over 100 London and Provincial papers with a combined circulation (all insertions) in excess of 90,000,000 and are telling the public about, and selling

Ralgex SOLID EMBROCATION

THE ONLY ANALGESIC IN HANDY STICK FORM **FOR YOU**

Ralgex is selling faster than ever for the relief of Pain due to:—

**BACKACHE — RHEUMATISM
NEURALGIA — STIFF NECK
LUMBAGO — STRAINED MUSCLES**

DISPLAY RALGEX

and prove in your own shop that if seen—easy to examine—*easy to touch*—sales go up and up. Ralgex is a first-class pick-up repeater line.

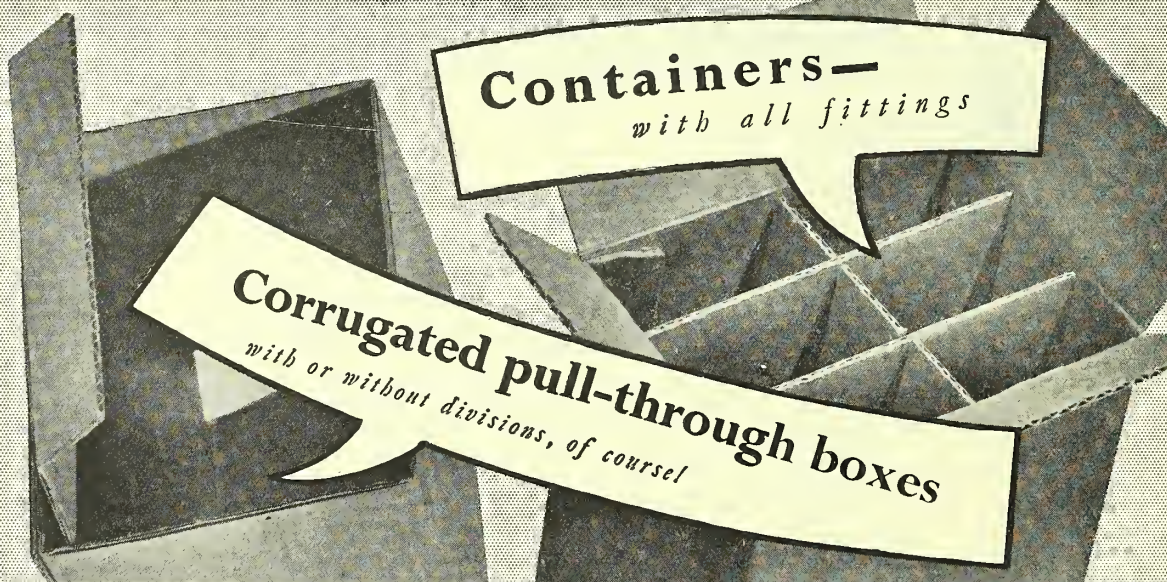
Very attractive show material gladly sent on request.

PHARMAX LIMITED, GRAVEL HILL, BEXLEYHEATH, KENT.



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Containers—
with all fittings

Corrugated pull-through boxes
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THE CHEMIST
AND DRUGGIST

ESTABLISHED 1859

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and the Pharmaceutical Society of Northern Ireland

Volume 167

April 13, 1957

No. 4025

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PUBLISHED BY
MORGAN BROTHERS (PUBLISHERS), LTD.,
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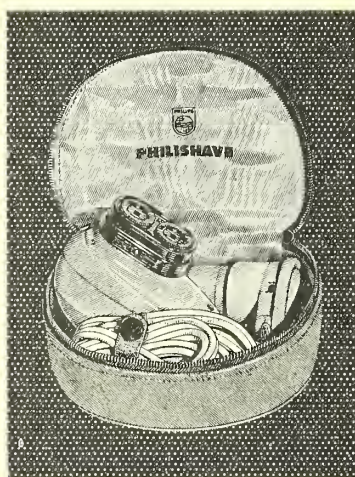
Start a 'Philishave' Free Trial Scheme yourself. We'll provide showcards, letters for sending to prospects, and agreement forms — plus a free sterilisation and making as new for stock service for those few shavers returned unsold after trial. Though, as we've found from experience, that very rarely happens!

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CENTURY HOUSE · SHAFTESBURY AVENUE · LONDON · WC2.**

I am interested in operating a 'Philishave' Free Trial scheme. Please send me full information and details of the available free material.

NAME

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(PS667A)

The CHEMIST AND DRUGGIST

Volume 167

APRIL 13, 1957

No. 4025

Prices of Proprietaries MINISTRY AGREES BASIS WITH MAKERS

THE Government has agreed with the Association of British Pharmaceutical Industry on a scheme for regulating the prices of certain proprietary pharmaceutical products.

The acceptance in principle of the scheme, which was proposed by the Association and modified in the course of two and a half-year-long discussions, was announced by Mr. Dennis Vosper (Minister of Health) in a written answer in the House of Commons on April 8. MR. VOSPER said that the scheme provided a method of establishing reasonable maximum prices for most proprietary pharmaceutical products: (1) By reference to export prices, where the products had established themselves in world markets; (2) by reference to the prices of equivalent standard drugs, where the products were available in standard as well as proprietary form; or (3) by using a special formula constructed for the purpose. Firms could also negotiate prices direct with the Health Departments. The Government's acceptance of the scheme was subject to the completion of some points of detail and to the working out of suitable administrative machinery, but he hoped it could be brought into operation within the next two months. The scheme would be on trial for three years, and subject to review. He was most grateful to the industry for the co-operation it had shown throughout the negotiations.

According to a statement issued by the Ministry of Health, over 4,000 products are expected to come under the scheme. They are those that fall into the categories of drugs which the Joint Committee on Prescribing (the Cohen Committee) recommended should be available to Health Service patients subject to satisfactory price arrangements with the manufacturers. They account for about 90 per cent. of the cost of all proprietaries prescribed under the Health Service—about £23.5 millions out of a total of £25.5 millions. The scheme is designed not to reduce prices generally but to curb excesses where they exist. While the overall effect on N.H.S. costs is, therefore, not expected to be large, a number of significant price reductions should result, and it is thought that in total those might produce savings of up to £750,000 a year. The scheme being, however, a novel one, no reliable estimate of savings to the Exchequer will be possible until it is actually running—and even then the constantly changing pattern of pharmaceutical demand may mask its effect. The

scheme is also expected to exercise a restraining influence for the future.

Care has been taken to allow for the industry's need to finance research and development; and the Ministry's statement says that the latter is important if the industry is to keep pace with world progress, and produce in Britain, necessary products which would otherwise have to be imported, and moreover maintain and strengthen its hold on valuable export markets. For that reason no product will come under the scheme during the first three years of its life; that will give opportunity to recover a reasonable share of development costs, and allow the product to settle down.

The scheme contains three main provisions which enable manufacturers to regulate their prices voluntarily.

(a) Under the first, the price in the United Kingdom will not exceed that which the product commands in adequate volume in overseas markets in face of international competition.

(b) When a product is not exported in significant quantity but an identical non-proprietary standard drug is available in the U.K. the price of the proprietary shall not exceed the price of the standard drug.

(c) If it is impossible to apply either

of those two provisions, a maximum price may be determined by using a detailed formula comprising (i) an ingredient allowance based on recognised trade prices and (ii) processing and packaging allowances according to a schedule covering different types of product.

The prices determined by the three formulas will be maximum prices. Immediate effect will be given to price reductions that result from the application of the scheme. On the other hand, if in any case the permitted maximum under the appropriate formula is higher than the existing price, the existing price will not be increased on that account. The scheme also provides that in special cases, and where a manufacturer prefers that course, a fair and reasonable price may instead be negotiated with the Health Departments.

Budget Changes

TAX ON VACUUM FLASKS LOWERED

AMONG the taxation changes proposed by the Chancellor of the Exchequer in his Budget Speech on April 9 for the financial year 1957 are: (a) Reduction in purchase tax rates from 30 per cent. to 15 per cent. on certain household goods classified in group 9 (a) (i) and (ii), group 9 (b) (ii), group 11 (a) domestic and office furniture [includes vacuum flasks and jars], and groups 12 (a) and 13 (a) [includes scissors previously charged at 30 per cent.]. (b) The one-shilling extra duty imposed on petrol and petrol substitutes in December 1956 to be cancelled immediately.

(c) The exemption from income-tax



GLASWEGIANS AT SPEKE: Pharmaceutical students from Glasgow photographed during a recent visit to the works of Evans Medical Supplies, Ltd.

and profits tax of the trading profits of "overseas trade corporations" earned abroad. [Companies benefiting include (i) manufacture and processing, and (ii) distribution].

(d) It is proposed to remedy a defect in the law relating to capital allowances whereby an investment allowance or initial allowance might, in certain circumstances, be given twice over in respect of the same machinery or plant.

(e) Income tax relief — mainly to those earning over £2,000 a year.

Council Election

TWELVE ACCEPT NOMINATION

THE following twelve persons have accepted nomination as candidates for election to the Council of Pharmaceutical Society on May 15.

ALDINGTON, Allen, London.

BLOOMFIELD, James Cecil, Portsmouth.

COOPER, William, Bristol.

DOWTY, Joseph Masters,

Southampton.

DURHAM, Stanley, Sheffield.

GRAINGER, Herbert Searle, London.

GRAVES, Henry Jarvis, Exmouth.

HINCHLIFFE, George, Dukinfield,

Cheshire.

HOLLAND, Kenneth, Upminster, Essex.

HOWELLS, William Spencer,

Richmond, Surrey.

MCNEAL, James Fallows, Hertford.

PERKINS, Majorie Hall, Leicester.

The following five persons did not accept nomination: Allen, Miss Joan, London; Brocklehurst, Mrs. Henrietta Smith, Kirk Ella, East Yorks; David, Griffith Thomas Mephram, Swansea; Greenwood, Mrs. Alice, Blackpool; and Islip, Miss Mary Cater, Harrow.

Franco-British Congress

DETAILS OF ARRANGEMENTS

THE following details of arrangements for the sixth Franco-British Pharmaceutical Congress, Evian-les-Bains, June 14-17, have been announced. Two charter aircraft will be available, one Air France and one British European Airways. Both are Viscounts, seating forty-nine passengers, and are regular service aircraft of those lines. The party will leave London Airport at noon on Friday, June 14, stop for lunch at Orly Airport, and arrive at Evian-les-Bains via Geneva at about 6 p.m. that day. The first function of the Congress will be dinner on Friday evening, when those arriving by charter plane will be joined by French members of Congress and by British members who may have made their own way to Evian. On Saturday morning there will be a session of Congress at which there will be an open debate on the future of retail pharmacy. The afternoon will be free. The day will conclude with a banquet. On Sunday there will be an all-day excursion, beginning with a boat trip across Lac Leman to Montreux for lunch. After lunch there will be a visit to the Chateau de Chillon, returning to Evian for dinner. After dinner there will be a *soirée artistique* and dancing. On Monday morning the Congress ends and the main party will leave by plane in time to arrive in London at about 6 p.m. It is expected that, unless numbers are unusually

large, all members will be in one hotel, which is a first-class one. The cost for the Congress only (Friday night to Monday morning, inclusive of hotel accommodation, meals and participation in all functions) is £5 per person. For the Congress and also for group travel by charter aircraft both ways the cost is £25 per person. Payment may be made to the Pharmaceutical Society in Sterling, and members will not be required to provide any currency from their basic allowances for travel or hotel accommodation. They will of course need to provide themselves with foreign currency for pocket money. It will be appreciated from the low cost that the French members of the Commission have been at great pains to make the meeting a success, and it is hoped that British members will give them full support. Early applications will greatly assist and it is advisable not to delay if the benefit of group travel is desired.

Statutory Committee

NO ACTION AGAINST PHARMACIST

THE Statutory Committee of the Pharmaceutical Society decided at a meeting in London on April 3 to take no further action against a pharmacist who had been found guilty of stealing from his employers. The pharmacist was warned, however, that if he came before the Committee again he could expect to be removed from the Register straight away. The case had been adjourned from February 6 (*C. & D.*, February 16, p. 175) so that the pharmacist could have an opportunity of appearing personally before the Committee.

Board of Trade

MOST DISTRICT OFFICES CLOSED DOWN

ALL district offices of the Board of Trade, other than that at Inverness, are to be closed in the interests of Government economy. The offices affected are at Dundee, Whitehaven, Sheffield, Liverpool, Rhyl, and Swansea. Three regional offices—at Nottingham, Reading and Cambridge—are also to be closed. The Board of Trade's regional organisation will then consist of nine regional offices, at Newcastle, Leeds, Bristol, Manchester, Birmingham, London (two), Cardiff, and Glasgow, together with the district office at Inverness.

Indian Hemp

PROSECUTION STATISTICS IN BRITAIN

THE Home Secretary (Mr. R. A. Butler) told Dr. D. Johnson, in a written answer in Parliament on April 8, that there have been no prosecutions for trafficking in Indian hemp in the past five years. The following were the figures for prosecutions for unlawful possession of cannabis, and the quantities of the drug seized:—

Year	Number of prosecutions	Quantity seized
1952	98	33 lb.
1953	90	59 lb.
1954	152	260 lb.
1955	139	180 lb.
1956	106	251 lb.

IRISH NEWS

THE NORTH

Morphine for Police

NEW REGULATIONS

THE Northern Ireland Minister of Home Affairs has made regulations under the Dangerous Drugs Act, 1951, whereby members of the Royal Ulster Constabulary who are in charge of police stations and such other members of the Force as the Inspector General might approve for the purpose are authorised to be in possession of morphine in ampoule form for administration in cases of emergency. Morphine in the possession of each member of the Force so authorised will, except when required for mobile units of the Force, be kept in a locked receptacle.

Ulster Chemists

MONTHLY MEETING OF EXECUTIVE

A MANUFACTURER whose alteration in the design of a particular tablet had caused some difficulty (see *C. & D.*, March 16, p. 288), has sent a letter of explanation to each member of Ulster Chemists' Association which may be shown to customers who might not otherwise be convinced that the correct tablets had been dispensed. That was reported by MISS A. E. STRACHAN (secretary) at a meeting of the Association's executive committee held in Belfast on April 2. She stated that she had written to the Northern Ireland county health committees protesting against special offer vouchers which had been placed in welfare clinics by a manufacturer, and which directed the public to particular pharmacies in the district. Replies had been received from most of the committees which assured the Association that such schemes were disapproved of, and would not be supported. Consideration was given to a letter from a member requesting action to secure higher profit margins on pharmaceutical goods. THE PRESIDENT (Mr. M. C. Mooney), who was in the chair, pointed out that that matter had been under consideration by the committee for some considerable time, and a sub-committee which had been formed had approached a number of manufacturers. The tendency to increase the wholesale price without a corresponding increase in the retail price was a matter of serious concern. The growing practice of gift offers was also considered serious. It was thought that, if those schemes were abandoned, profit margins might be increased. THE SECRETARY reported that complaints had been received about the practice of manufacturers to pack new, highly-priced tablets in quantities of 100 while a prescription usually called for only a small number of tablets. It was thought that smaller packs should be made available, since considerable capital outlay was involved and the balance of the pack might lie on a pharmacist's shelf for a long time. The recent whist drive in aid of the Northern Ireland Chemists' Benevolent Fund realised £26 2s. The following were elected to membership: Messrs. B. C. Murphy, The Square, Crossmaglen; N. J. McKenna, 10 Strule

Gardens, Altnagelvin, Londonderry; B. Boyle, 10B Regent Street, Newtownards. A number of employees, whose applications had been approved by the committee of the Associates' Section, were elected to associatenesship.

Also present were:—Misses C. B. Abernethy, C. E. Culbert, Messrs. J. C. Acheson, H. S. Anderson, N. A. J. Anderson, J. A. Brown, J. Caldwell, H. G. Campbell, R. Gibson, T. A. Gibson, C. L. Gordon-Rattic, W. S. Hall, W. L. McDonnell, R. A. McEwen, J. McGregor, W. R. McNabb, W. J. Moffett, W. J. Rankin, A. Steede, A. Templeton, and J. C. Wellwood. Apologies for absence were received from:—Messrs. W. H. Boyd, H. W. Gamble, J. Paul, C. A. Quinn.

THE REPUBLIC



TABLET MACHINE FOR COLLEGE: Mr. J. Russell Cook (Dublin manager for Pfizer, Ltd.) presents a tabletting machine to the College of Pharmacy, Shrewsbury Road, Dublin, on behalf of his company. In the picture Mr. P. F. McGrath (president, Pharmaceutical Society of Ireland) is seen receiving the machine. In background are Dr. R. Timoney (dean of the College) and (in white coat) Mr. Christopher O'Connor (professor of pharmacognosy and biology).

NEWS IN BRIEF

A NEW British Standard for expendable photographic flash bulbs, B.S.2833, has been introduced. Copies are obtainable from the British Standards Institution, 2 Park Street, London, W.1, price 2s. 6d.

THE Union of Shop, Distributive and Allied Workers has issued a statement saying that it considers it as "irresponsible, mischievous and contrary to public policy" that the Shops Bill should be "misrepresented" as being in any way an attack on the freedom of the consumer.

THE Board of Trade is considering an application for drawback of duty in respect of imported grease and tallow used in the manufacture of stearine fatty acids, oleine fatty acids and cloth oils and wool oils containing not less than 70 per cent. by weight of oleine fatty acids, for export.

SPORT

Golf.—EDINBURGH CHEMISTS' GOLF CLUB, at Liberton, recently. *Raimes tankard*, 1, H. Davidson (30), 64; *best scratch*, H. Semple, 75; *No. one section*, 1, J. B. McCaig (8), 69; *No. two section*, J. Robertson (20), 71.

TOPICAL REFLECTIONS

By Xrayser

Brandy for the Parson

There was an original flavour to the recent meeting of the Finchley and District Branch of the Pharmaceutical Society, and members who attended will have a fuller appreciation of the duties of those responsible for the collection of that part of the revenue which comes under the heading of "indirect" taxation. I don't pretend to understand the ethics of taxation. I have known men of blameless character—men who would regard any evasion of income-tax liability as quite beyond the pale—who could smoke a contraband cigar with no qualms of conscience. There has even been in their demeanour a suggestion of smugness amounting almost to virtue. The explanation probably lies in the traces of boy which persist in manhood—for the unripe apple surreptitiously come by was infinitely superior to those in the fruit bowl at home. Fiction has always striven to put a romantic gloss on those who engaged in the hazardous pursuit of smuggling, but I suspect that the reality was a grim affair of violence and sudden death. Yet I have to thank your report and Mr. F. C. Tanner's address for sending me back to Rudyard Kipling—

Five and twenty ponies, trotting through the dark,

Brandy for the Parson, 'Baccy for the Clerk.

Them that asks no questions isn't told a lie—

Watch the wall, my darling, while the Gentlemen go by!

Modern Taxes

Whatever excitement and glamour may have attached to those earlier days of spirits and tobacco, there is a mundane and unromantic flavour about the purchase tax. Anything less likely to inspire the poet or novelist (with perhaps the exception of your rhymester Mr. J. J. Haytor) would be difficult to imagine, and there is no doubt, as the Finchley lecturer said, that a tax that produces £400 millions per annum is not easily removed or transferred to another source. Originally it was intended to curtail consumption in a time of emergency, though also, as its sponsor (Sir John Simon) made clear at the time, there was a need for the revenue so produced. The position occupied by purchase tax is productive of varying opinions. If the tax were removed (assuming that to be practicable) some hold that the result would be immediate inflation. If, on the other hand, with the tax geared to the wholesale price of the product, there is a rise in price—and there have been many in recent months—there results a proportionate rise in the amount of the tax, and that, in the opinion of others, has equally bad effects. Meanwhile the retailer continues, in a compulsorily benevolent manner, to tie up some of his capital in a hazardous venture, for the goods may not sell, or the tax rate may be reduced or abolished, and he finds himself in the rôle, *ipso facto*, of public benefactor. Such reflections on the eve of the Budget are necessarily jaundiced. But, bearing in mind the impositions exacted from retail pharmacists by some of Mr. Peter Thorneycroft's predecessors in office, how should my thoughts be cheerful. Not, at least, till I know what the Chancellor has in store (and your subscribers will know it before they read these words) shall I even look for my rose-tinted spectacles.

The Unpredictable

Your leader on the estimated costs of the Pharmaceutical Service enumerates the problems that confront those whose job it is to think of a number and add at least something to it. Your comment suggests that there is some guesswork in the matter, and it is no secret that that is so, though I am credibly informed that every avenue has been explored to eliminate the element of chance. I am led to believe, also, that no crystal gazer in London was prepared to risk her reputation on such an enigma. One of the foremost seers went so far as to say that football pools presented no difficulty whatsoever, but she declined, even for a tempting fee, to look into the glass for the benefit of Civil Estimates. She had no desire, she indicated, to appear at the Bar of the House.

FESTIVE OCCASIONS

LEEDS

Attack on "American Methods"

SPEAKING at the annual dinner of Leeds Branch of the Pharmaceutical Society on March 27, Dr. J. E. RUSBY (chairman, Leeds Executive Council) criticised "high-pressure American salesmanship of drugs" in Britain. After stating that the "tremendous" amount of research undertaken by large concerns had led to an increase in the price of drugs, Dr. Rusby said he thought that the use of American advertising methods was not a good thing because it was making hypochondriacs of many people. He asserted that over 50 per cent. of the amount spent on American drugs went back to the United States. Britain had always sought to be conservative in its outlook, and until a new product had been tested it was not launched on a long-suffering public. Dr. Rusby thought that that was not the case on the other side of the Atlantic. Other speakers included Professor A. D. MacDonald (a member of the Society's Council), Mr. E. A. Brocklehurst (sheriff of Hull and a member of the Society's Council), the lord mayor of Leeds and Mr. John Schofield (Branch chairman).

NORTH STAFFORDSHIRE

Success of Joint Efforts

THE joint efforts of the medical and pharmaceutical professions had led to some startling advances in medicine and surgery said Dr. C. H. CATLIN (chairman, North Staffordshire Division of the British Medical Association) at the annual dinner and dance of the North Staffordshire Branch of the Pharmaceutical Society at Stoke-on-Trent on February 28. Dr. Catlin was proposing the toast to the Pharmaceutical Society. He said that the rapid progress made in the past thirty years had transformed the whole face of medical practice. "We have seen such killers as pneumonia, meningitis and diphtheria, but gone are the days when those words struck terror into our hearts. Tuberculosis is also on the way out." Dr. Catlin then paid tribute to the active interest the Society had always shown in the promotion of research. Mr. D. W. HUDSON (the Society's vice-president) responded. A toast to the guests was proposed by Mr. H. H. MORRELL (president of the Branch). Mrs. Morrell (chairman of the ladies' section of the Branch) presented a cheque for £20 to Mr. Hudson for the Society's Benevolent Fund.

LIVERPOOL

Plea for Standard Names

THE suggestion that pharmacists should press for standardisation of drug names was made by Professor B. G. MAEGRAITH (dean of the School of Tropical Medicine, Liverpool) at the annual dinner and dance of Liverpool Chemists' Association and Branch of the Pharmaceutical Society on March 13. More than 400 attended the function, the guests including the lord mayor and lady mayoress of Liverpool. PROFESSOR MAEGRAITH proposing the toast to the Pharmaceutical Society said that Liver-

pool probably had the most distinguished school of tropical medicine in the world. It was time the pharmaceutical industry realised the need for the standardisation of names of drugs instead of having a multiplicity of names for drugs which were basically the same. Mr. T. REID (a member of the Pharmaceutical Society's Council) said that pharmacy, professionally, stood higher than ever before. Members of the profession must have control over the quality and quantity of those who entered it and exercise discipline over those who were within it. MR. BERNARD M. KELLY, proposing the toast to the guests, said that the function was the highlight of his year of office as president of the Association, which had had many outstanding functions during the 107 years of its existence. THE LORD MAYOR OF LIVERPOOL responded. A telegram of good wishes from the Reading Branch of the Society, whose annual dinner was held on the same evening, was read out.

WESTERN LONDON

One Battle, Different Flags

It was to be regretted that the Pharmaceutical Society had never attempted to unify pharmacy, said MR. ITHEL H. WILLIAMS (vice-president) at the annual dinner and dance of the Western Pharmacists' Association of London on March 28. A united front in pharmacy was a desirable thing at present, as both hospital and retail pharmacists were struggling to attain more suitable recognition for their professional services. They fought the same battle under different flags and it would surely be much better to fight under the same flag. The Society, he said, seemed to be out of touch with the realities of pharmacy. They rejoiced that there was a pharmaceutical faculty at London University but they should not place too much emphasis on the degree course. The interests of the Society and of retail lay in the Pharmaceutical Chemist diploma examination. New entrants were urged to take the degree course but the successful students entered industry or manufacturing, being lost to retail and, often the Pharmaceutical Society itself. "Let us not be progressive in our outlook at the expense of our own heritage," he declared. Pharmacy had changed from pills and plasters to penicillin and radioactive isotopes, but had the Society, he asked, kept pace with the social as well as the pharmaceutical revolution which had

taken place. At the outset of his toast, "The Pharmaceutical Society of Great Britain," Mr. Williams paid tribute to Mr. W. Spencer Howells, who for the past nine years had been treasurer of the Pharmaceutical Society and was about to celebrate his twenty-first year as a member of the Society's Council. He suggested that Mr. Howells should be presented with a golden key to mark the occasion and hoped that the twenty-first celebrations would herald a new era of prosperity for the Society. In response to the toast, MR. HOWELLS said that he must defend the Society's educational policy. There had been phenomenal changes in the practice of pharmacy which made it pointless to train pharmacists on the lines on which they were trained in the old days. For many years the educational syllabus was static with the emphasis placed on manipulative skill. Now it had changed over to technical and academic knowledge and it was to the credit of the Society that it had always brought its educational policy up to date. Indeed, the Society had perhaps been a little ahead of developments over the years. DR. F. HARTLEY (chairman of the British Pharmaceutical Conference) in proposing "the Western Pharmacists' Association," spoke of the long and impressive record of worthy and progressive contributions which its members had made to pharmacy. MR. SCRIVEN J. TURNER (president) said that the Western Association was in its sixty-seventh year. He personally had long connections with the Association as his father and grandfather had been members. During the evening a telegram of good wishes came from immediate past-president, Mr. W. T. Pratt, at present in South Africa.

BIRMINGHAM

£50 for Benevolent Fund

A CHEQUE for £50 from Birmingham Pharmaceutical Association in aid of the Pharmaceutical Society's Benevolent Fund was presented to Mr. J. C. Bloomfield (a member of the Society's Council) by Mr. D. G. Beck (president of the Association) on March 6. The ceremony was performed at the Association's annual dinner and dance at which Mr. and Mrs. Beck received over 200 members and friends. Among the principal guests were the lord mayor and lady mayoress of Birmingham, Mr. A. Aldington (chairman, National Pharmaceutical Union), and Dr. C. Venables (principal, Birmingham College of Technology).

LIVERPOOL CHEMIST DINERS: Group photographed at annual dinner-dance of Liverpool Chemists' Association and Branch of the Pharmaceutical Society on March 13. Left to right: The lord mayor and lady mayoress of Liverpool; Mrs. and Mr. Bernard M. Kelly (president of Liverpool Chemists' Association).



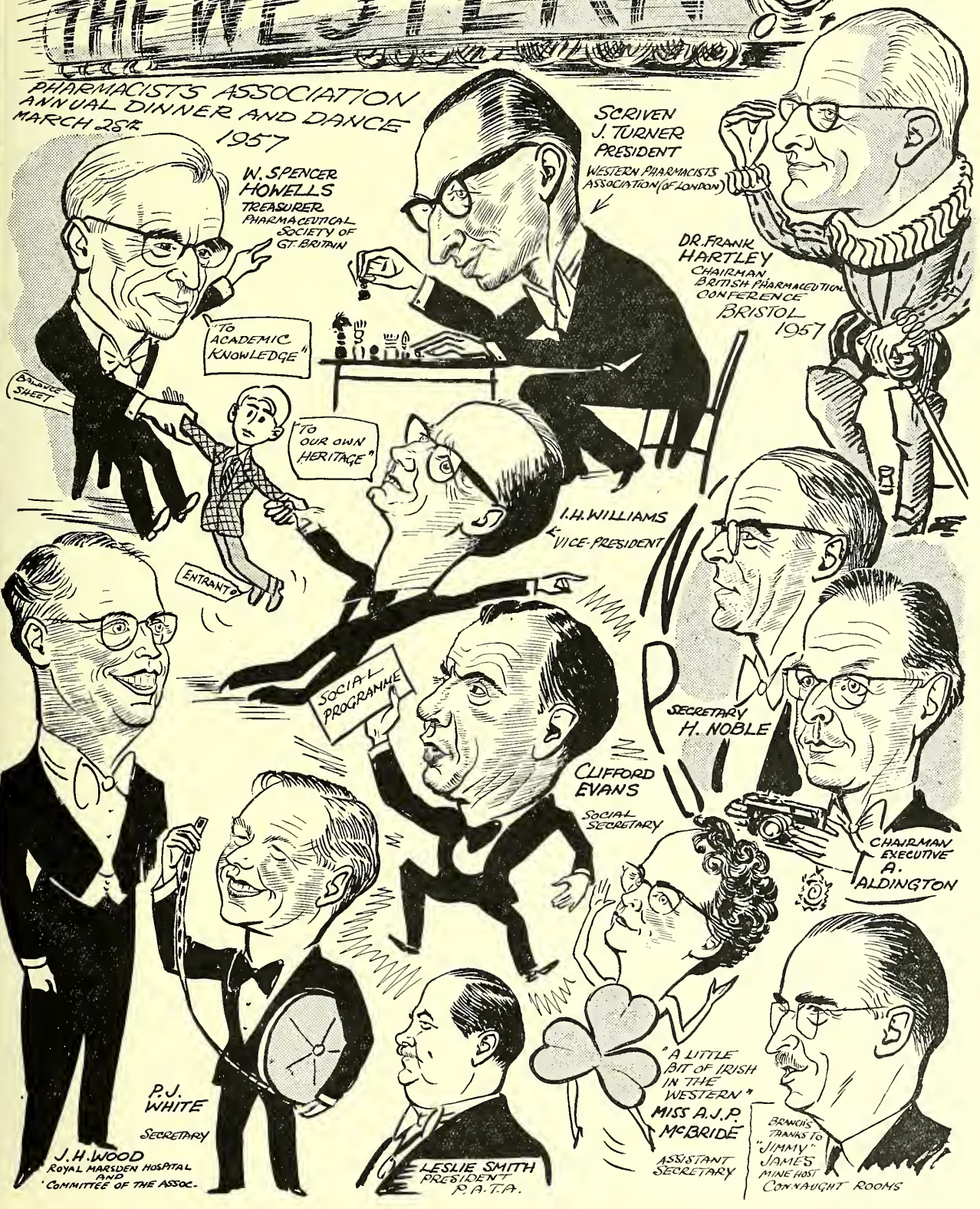
SOME PERSONALITIES
(AS SEEN BY C&D) CARTOONIST

1957

1891

THE WESTERN

PHARMACISTS ASSOCIATION
ANNUAL DINNER AND DANCE
MARCH 28th
1957



LEGAL REPORT

Doctor Not Guilty of Murder

AT the Central Criminal Court, London, on April 9, a jury found Dr. John Bodkin Adams, Eastbourne, not guilty on a charge of murdering Mrs. Edith Alice Morrell at Eastbourne on November 13, 1950. The trial lasted over three weeks. It was the Crown's submission that Dr. Adams, by the administration of drugs to Mrs. Morrell, brought about her death. During a period of ten-and-a-half months up to her death, Dr. Adams prescribed for Mrs. Morrell barbiturates amounting to 1,629½ grains; Sedormid, 1,928 grains; morphine, 165 grains; and heroin, 139½ grains.

At an early stage the defence asked for a complete list of prescriptions relating to the medical treatment provided by Dr. Adams for Mrs. Morrell, Messrs. Alfred E. Spencely, Bolsover Road, Eastbourne, A. W. Butler, Susans Road, Eastbourne, and A. W. C. A. Young, Stokenchurch, Buckinghamshire, all pharmaceutical chemists, gave evidence confirming lists produced by the prosecution showing the drugs made up by H. R. Browne, chemists, Eastbourne, for Mrs. Morrell, on prescriptions made out by Dr. Adams. Mr. Thomas Reid (a member of the Pharmaceutical Society's Council), Haslemere, Surrey, said he had prepared a list of prescriptions made by Dr. Adams for Mrs. Morrell and dispensed by Messrs. Browne from January to November 12, 1950. The list showed all the prescriptions containing restricted drugs. He had also prepared another list showing other prescriptions, which included simple preparations, mild tonics, eye-drops, and so on. He showed hypodermic syringes of 1-c.c., 2-c.c., and 5-c.c. capacity. The judge (Mr. Justice Devlin) asked if it could be stated how many grains a 5-c.c. syringe would hold, and Mr. Reid said that one could get 12½ grains of heroin into such a syringe. Mr. Reid said that his services were enlisted by the prosecution after proceedings in the magistrates' court.

Exercise books kept by the nurses and containing their reports of what happened during their periods of duty, including what tablets and injections were given, were produced. Dr. A. H. Douthwaite, a Harley Street specialist, said that an injection of paraldehyde superimposed on heroin or morphine and heroin would be likely to produce death. The holder of a diploma in anaesthetics would know more about drugs than an ordinary general practitioner. Dr. Michael Ashby, Harley Street, London (consultant specialist at a number of hospitals), said he did not think it was possible that a woman of eighty-one could have survived morphine and heroin in the quantities shown to have been prescribed between November 8 and 12 without being worked up to that dosage. By the time Mrs. Morrell went to Eastbourne she was firmly addicted to drugs. It would be a doctor's duty to wean her from that addiction. He had studied the nurses' reports and thought there was a faint chance during the first week of November to wean her from addiction. He did not feel in a position to say that on a certain day or even week Dr. Adams

decided to murder Mrs. Morrell.

A defence witness, Dr. John Harman, said that he had heard Dr. Douthwaite's evidence that drugs prescribed on certain days made up a lethal dose, but could not agree with that opinion. Defence Counsel, in his address to the jury, said that among the things that had been agreed by the doctors was that the medical outlook of Mrs. Morrell at that time was a life of about six to twelve months. To make her life as bearable as possible was the most Dr. Adams could do.

In his summing-up to the jury, Mr. Justice Devlin said that there had been a good deal of discussion about the circumstances in which doctors might be justified in administering drugs that would shorten life in cases of severe pain or cases of helpless misery . . . but it remained a fact and remained the law that no doctor, nor any man, had the right deliberately to cut off life. Counsel for the defence was saying that the treatment given by Dr. Adams was designed to promote comfort, and if it was the right and proper treatment of the case the fact that accidentally it would shorten life did not make any grounds for convicting him of murder.

Referring to the discrepancies in the amount of drugs prescribed and that shown as administered in the nurses' records, his Lordship asked whether there was a channel down which the drugs which were prescribed were improperly disappearing. Supposing the jury were to think that Dr. Adams had been dishonest about drugs, how much better it would be that they should unjustly suspect him of that sort of dishonesty than that they should unjustly convict him of murder.

A further indictment charging Dr. Adams with another murder is not being proceeded with. An extension of bail as allowed by the Eastbourne magistrates on "a series of offences . . . under the Dangerous Drugs Act" was granted.

COMPANY NEWS

Last year's figures in parentheses.

T. & H. SMITH, LTD.—Mr. J. A. Hiddleston has been appointed deputy managing director of the company, with effect from April 1.

EVANS MEDICAL SUPPLIES, LTD.—Group trading and manufacturing profits for 1956, subject to audit, are £362,927 (£373,321) and net profits £117,796 (£122,964).

MONSANTO CHEMICALS, LTD.—Mr. H. Driver has been appointed to alternate with Mr. Marshall E. Young on the board of the company. Mr. Driver continues in his office as secretary and head of the legal department.

AYRTON, SAUNDERS & CO., LTD.—Consolidated trading profit for 1956 is £86,278 (£93,470); less general charges of £31,493 (£32,834) leaving net profit of £54,785 (£60,636). Tax charged £20,907 (£22,292). Ordinary dividend recommended is 10 per cent. (same); general reserve £21,947 (£16,947).

GLAXO LABORATORIES, LTD.—Trading profits in the half year to December 31, 1956, are reported at £1,601,000 (£1,313,000), with net earn-

ings, after estimated taxation, rising from £725,000 to £805,000. The higher earnings arise from an increase of 21 per cent. in turnover value. The increased volume of business, the board add, has been well maintained, with overseas subsidiaries making a substantial contribution. Exchange restrictions and taxation changes may affect the amount eventually received by the parent company.

BUSINESS CHANGES

GEE CROSS LABORATORIES, LTD., are removing to Wilton Street, Denton, Manchester (telephone: Denton 3924), on April 18.

CRESSWELL BROS. SPONGES (World Natural Sponge Suppliers, Ltd.) have removed to 5 Earlsam Street, London, W.C.2 (telephone: Temple Bar 5331).

EVER-READY RAZOR PRODUCTS, LTD., have acquired financial control of Arvin Electric, Ltd., Southend-on-Sea. Both companies are to retain their separate identities with Messrs. Arvin continuing to produce electric shavers. Ever-Ready Razor Products, Ltd., recently moved their executive office to 26 Bedford Row, London, W.C.1.

Appointments

WILLIAM R. WARNER & CO., LTD., have appointed Mr. John Cannell, M.Sc., B.Sc., F.P.S., A.R.I.C., chief quality control chemist in their new laboratories at Eastleigh, Hants.

THE CROOKES LABORATORIES, LTD., Park Royal, London, have appointed the following technical representatives: Mr. D. Peregrine, F.P.S., formerly a sales executive with a British drug manufacturer (to take over Mid and South Wales, from Glamorgan to Montgomery); Mr. N. W. Bradbury, M.P.S. (North-west Lancashire, Westmorland, Cumberland and the Isle of Man); Mr. D. Smith (South Scotland); and Mr. O. A. R. Newton (Somerset, Devon, Cornwall and the Channel Islands).

PERSONALITIES

MR. R. FLETCHER, M.P.S., has been elected vice-chairman of Derby chamber of trade.

MR. J. SKERRETT SMITH, M.P.S. has been elected chairman of Pear Tree Ward Conservative Association, Derby.

ALDERMAN CHARLES DAVIS, M.P.S., was the subject of "Portrait Corner," a personality column in the *Leamington Spa Courier*, on March 22.

ALDERMAN W. BROWNBILL, M.P.S., is representing Accrington at the annual conference of the Municipal Corporations' Association at Hastings September 17-19.

MR. E. P. BETTS, M.P.S., has retired after forty years' service with Boots, Ltd.; for the past twenty-one years he has been manager of the company's Macclesfield branch.

MR. JOHN BLACK, M.P.S. (secretary of Stafford Branch of the Pharmaceutical Society) has been elected chairman of Stafford Branch, People's Dispensary for Sick Animals.

BIRTH

FLOCKHART.—At 40 St. Lawrence Avenue, Ramsgate, Kent, on March 10, to Christian, wife of Laurence Ninian Archibald Flockhart, B.Sc., F.P.S., a son.

MARRIAGES

MOTION—MILES.—At Perth, recently, Robert Motion, M.P.S., 116 Rannock Road, Perth, to Margaret Miles.

PENMAN—GRAY.—At Bethelfield Church, Kirkcaldy, Fife, on April 3, George Penman, M.P.S., 14 James Avenue, London, N.W.2 (a member of the editorial staff of THE CHEMIST AND DRUGGIST) to Irene Gray, Main Street, West Wemyss, Fife.

PICKEN — JAMIESON. — At St. John's Presbyterian Church, Newtownbreda, Belfast, on April 2, Robert J. Picken, M.P.S.N.I., 15 Knockeden Park, Belfast, to Miss S. McC. Jamieson, 43 Malone Road, Belfast.

STEPHENSON-OGILVIE.—At Singapore, on April 4, John William Stephenson, Delgany, co. Wicklow, Eire, to Christine Scott Ogilvie, M.P.S., 48 Morningside Drive, Edinburgh, 10.

DEATHS

CAMPBELL. — At his home, 6 Lethington Road, Whitecraigs, Glasgow, on April 3, Mr. Kennedy Campbell, M.I.Chem.E. Mr. Campbell was a director of the British Dyewood Co., Ltd., Glasgow, and had recently completed fifty-nine years' service with the company. He was the son of Mr. John Campbell, works manager of W. R. Scott & Co., the British Dyewood Co.'s predecessors. He was born in the manager's house on the works premises in 1883. He won a scholarship to Allan Glen's School and entered the service of the company in 1898. He continued his studies by night classes at the Royal Technical College, Glasgow, and became a junior chemist. During the following years he advanced rapidly and was chief chemist to the British Dyewood and Chemical Co. who succeeded the private concerns. He was later in technical control of the two Glasgow works as well as the works in Jamaica. He joined the board of the British Dyewood Co., Ltd., in 1937 and until a few weeks before his death was daily in attendance at the company's works and offices. During his life Mr. Campbell saw and partook in the tremendous changeover from natural dyewoods, first to concentrated and standardised extracts and thereafter to aniline colours. He was, after 1918, responsible for the conversion of the old dyewood business to the modern factory in Glasgow. He is followed as works director by his elder son, Mr. John Campbell, who joined the board of the British Dyewood Co., Ltd., in 1948.

COOPER. — On March 22, Mr. Henry Cremer Cooper, M.R.C.S., L.R.C.P., L.S.A., L.D.S., R.C.S. Mr. Cooper was managing director of Cooper Son & Co., Ltd., chemists, 120 Gloucester Road, London, S.W.7.

COX. — At 1 Laurel Road, Barnes, London, S.W.13, on April 4, Mrs.

Norah Kathleen Cox, widow of the late Arthur Hawker Cox, founder of Arthur H. Cox & Co., Ltd., manufacturing chemists, Brighton, and mother of Mr. Roy Cox (joint managing director of that company).

NOYCE.—On April 5, after a short illness, Mr. A. E. Noyce, representative for East Anglia and South-east England, of Smith Kcndon, Ltd., London, S.E.1.

THOMAS. — On March 21, Mr. Penry Sidney Thomas, M.P.S., 110 Torquay Road, Newton Abbot, Devon, aged eighty-two. Mr. Thomas served

his apprenticeship in Glasgow. For some years he was in the pharmacy department of the Lambeth Infirmary, London, S.E.11. Later he went into business at Aberbargoed and Caldicot, Mon. He had lived in Newton Abbot since he retired eleven years ago.

WIDGERY.—On March 8, Mr. Alfred Ernest Widgery, M.P.S., 29 Avondale Road, Finchley, London, N.3. Mr. Widgery qualified in 1910.

WILSON.—On March 11, Mr. James Wilson, M.P.S., 108 St. Georges Park Avenue, Westcliff-on-Sea, Essex, Mr. Wilson qualified in 1909.

THERAPEUTIC SUBSTANCES

New amendment regulations

BY Regulations made on March 28 and in operation on May 1 a number of therapeutic substances are brought under the Therapeutic Substances Act, 1956; more up-to-date provisions relating to pyrogen tests and to surgical materials are given; regulations relating to oxophenarsine salts are revoked; and a number of detailed amendments to existing regulations are made.

The substances added to Schedule 1 of Therapeutic Substances Act, 1956, as being substances the purity or potency of which cannot be adequately tested by chemical means, are as follows:—

(a) Any absorbent or protective material capable of being absorbed by the body tissues which is offered for sale for use in surgical operations upon the human body;

(b) tetracycline, polymyxin B and viomycin which are intended for parenteral injection, and preparations containing any of the said substances which are intended for such injections;

(c) hyaluronidase, streptokinase, streptodornase, and streptokinase-streptodornase which are intended for parenteral injection, and preparations containing any of the said substances which are intended for such injection;

(d) heparin and preparations thereof;

(e) corticotrophin and preparations thereof.

New schedules are given relating to the above substances.

Schedule 1 of the new Regulations describes a test for freedom from pyrogenic substances and that test is to be used where any therapeutic substance is required by the relative schedule to be subjected to a test for freedom from a pyrogenic substance. Thus the special pyrogen test for antibiotics as described in Schedule 9 of the 1952 Regulations is cancelled.

The provisions of the 1952 Regulations relating to surgical ligature and surgical sutures are replaced by a new schedule of more up-to-date and extended provisions relating to surgical materials.

The provisions of the 1952 Regulations relating to oxophenarsine salts are revoked.

With regard to the labelling of therapeutic substances, the provisions of the 1952 Regulations are amended so that the labelling may be done not only by the manufacturer of the substances, but by "such other person as the licensing authority may in any particular case approve." An amendment is made so

that the requirement on a label of a statement of potency in units defined in terms of relation to the standard preparation specified in the relative schedule is not required for an antibiotic or for a preparation containing an antibiotic.

Apart from B.C.G. vaccine (other than dried B.C.G. vaccine), smallpox vaccine (other than dried smallpox vaccine) or whole human blood, the label or wrapper of a therapeutic substance need only state, instead of the date, the month and year of manufacture and month and year up to the end of which a substance may be expected to retain a stated potency or not to acquire excessive toxicity.

Test for sterility, as required under regulation 12 of the 1952 Regulations, must be made when the following additional substances are intended for parenteral injection:—Hyaluronidase, streptokinase, streptodornase and streptokinase-streptodornase, and preparations of any of the said substances; heparin and preparations thereof; corticotrophin and preparations thereof.

The provisions applicable to B.C.G. vaccine in Part II of Schedule 3 of the 1952 Regulations are amended. The provisions in Part IV applicable to smallpox vaccine are also amended.

A new regulation defines the proper name of an antibiotic as the name by reference to which it is defined in the part of Schedule 9 of the 1952 Regulations specifically relating to it; and the proper name of a derivative of an antibiotic, or of a preparation containing an antibiotic, as such name as may be approved by the licensing authority as indicating the nature of the derivative or the preparation.

Certain amendments are made to the labelling of antibiotics. The minimum volume of the contents of a container of a solution or of a suspension of a single antibiotic or of a preparation of a single antibiotic must now state the minimum volume of the contents of the container as well as the minimum number of units of the antibiotic per mil of the solution or suspension; and in the case of a solid preparation, the minimum number of units of the antibiotic per mgm. of the contents and the minimum total number of units of the antibiotic in the container; and in either case the nature of any substance that has been mixed with the antibiotic. But the licensing authority may in the case of any solid preparation of an antibiotic dispense with the

requirement that the minimum number of units of the antibiotic per mgm. of the contents shall be stated. The label on the container of a mixture of two or more antibiotics must state, in the case of a solution or suspension, the minimum number of units of each antibiotic per mil of the solution or suspension and the minimum volume of the contents of the container; in the case of a solid preparation the minimum total number of units of each antibiotic in the container; and in either case the nature of any substance which has been mixed with the antibiotics.

The label on the container of a single antibiotic, or of a preparation of a single antibiotic, with respect to which the licensing authority has approved the expression of the potency in some other manner than units per mil or units per mgm., and the container of a mixture of two or more antibiotics with respect to one or more of which the said authority has approved the expression of the potency in some such other manner, must now bear such particulars with re-

spect to each antibiotic in the container, and with respect to the nature of any substance other than an antibiotic contained therein, as the licensing authority may require.

The special provisions applicable to penicillin given in Part II of Schedule 9 of the 1952 Regulations are amended, the standard preparation and strength being redefined. Similarly the strength of streptomycin in Part III of the Schedule is altered; the test for freedom from abnormal toxicity is amended and the test for freedom from histamine-like substances is also amended.

Dimethyl tubocurarine is exempted from the test for undue toxicity defined in Part III of Schedule 11 of the 1952 Regulations.

The label on the container of oily injection dimercaprol must now state that the solution is intended for intramuscular injection only.

The Regulations are The Therapeutic Substances Amendment Regulations, 1957 (S.I., 1957, No. 550). Copies are obtainable from H.M. Stationery Office.

TRADE NOTES

Discontinued. — Merck Sharp & Dohme, Ltd., Hoddesdon, Herts, announce that Lapactic pills are discontinued. Stocks are exhausted.

Sole U.K. Agents. — Biometica, Ltd., Elstree Way, Boreham Wood, Herts, have been appointed sole selling agents in the United Kingdom and Northern Ireland for Scherk face lotion and face milk.

Reorganisation. — It is announced that the old-established firm of Cresswell Bros. Sponges is being reorganised. Any outstanding and new orders for Reliance sponges and chamois leathers sent to 5 Earlham Street, London, W.C.2, are being dealt with as quickly as possible.

A C.F. Bronchial Balsam. — Hill's bronchial balsam, a C.F. listed proprietary, is obtainable through trade wholesalers or direct from the sole primary distributing agents, Hartley's Chemists, Ltd., Spring Bank Works, Nelson, Lancs.

Golden Jubilee Offer. — To celebrate their Golden Jubilee year, Thermos (1925), Ltd., Seymour Road, London, E.10, are offering a special display unit that holds one of each size Thermos brand vacuum flask (either 14 or 15 range) in a "Jubilee flask parcel" (list price £13 2s. 11d.; selling price £16 2s. 3d.).

Distributors in the North-east. — Bremner-White, Ltd., 13 Elm Street, Newcastle-on-Tyne, 4, announce that all inquiries for Appleford's cider vinegar, black molasses and fudges from retailers or wholesalers in Northumberland, Durham and North Yorkshire should be sent to them as sole distributors in the North-eastern Counties.

Demonstrations. — Two demonstrations are being sponsored by Rosedale Associated Manufacturers, Ltd., 34 Oxford Street, London, W.1, at the National Festival of Hairdressing, 1957. The individual methods of several West End hair stylists in using Rosedale cold-wave creme lotion are being shown. The second presentation has been planned to illustrate the correct way of using Rosedale Lanospray (for lending a "soft glow" to the

BRANCH REPRESENTATIVES' MOTIONS

Amendments included in agenda

THE following amendments to resolutions tabled for discussion at the Branch Representatives' meeting of the Pharmaceutical Society (see *C. & D.*, February 16, p. 179) have been included in the agenda for the meeting:—

Aberdeen and North-eastern Scottish resolution [on the control of new products].

Delete all after "and under too many different names" and insert "Prescriber guidance is suggested along the following lines:—A joint expert committee should be set up by interested pharmaceutical and medical bodies. That committee would be competent to examine products submitted to it by manufacturers, and would grant the use of a mark, to be used on those products which satisfy the following conditions:—(a) that they are new substances, new combinations of substances, or new presentations; (b) that evidence has been submitted to the committee of properly conducted clinical trials, showing that the products represent useful advances over those already marketed." (Romford Branch.)

Birmingham resolution (1) [on ensuring that the full period of apprenticeship is complied with and that the period should be measured in hours].

After "hours" add "and that a report be submitted by the pharmacist(s) responsible for his practical training." (Portsmouth Branch.)

(2) [on Forces pharmacists being granted commissions].

Delete all after "action to ensure" and substitute "the formation of a Pharmaceutical Corps in all three Armed Services, and that those Pharmaceutical Corps should be directed and staffed by members of the Pharmaceutical Society holding commissioned and non-commissioned rank." (Romford.)

Eastbourne resolution [on the use by the Armed Services of the term "pharmacists" for personnel not regi-

stered with the Pharmaceutical Society].

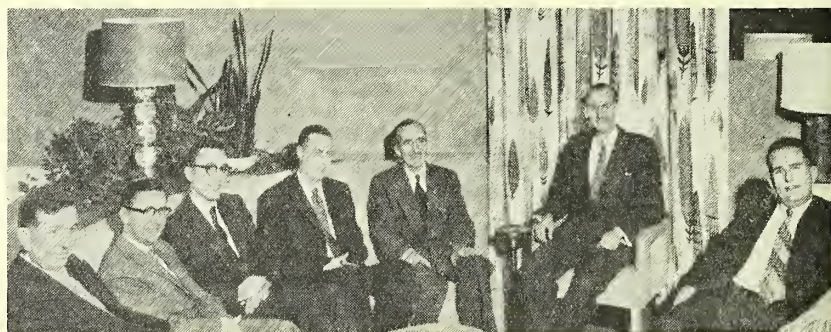
Delete the last three words of the resolution. (Thames Valley Branch.)

Reading resolution (1) [on the allocation of grants to Branches].

Add "and that any change in the method of allocating grants to Branches should take into account the difficulties of small Branches." (Bedfordshire Branch.)

MANUFACTURERS' ACTIVITIES

Entertained by Directors. — The joint managing directors of Edward Taylor, Ltd., Monton, with the directors and their ladies entertained their Scottish manager (Mr. P. C. Luty) and Mrs. Luty at a farewell dinner in Manchester, on March 27, on the occasion of Mr. Luty's retirement. Mr. Luty had been with the company for a period of twenty-eight years.



A "COMMONWEALTH CONFERENCE" IN AMERICA: Leading executives and representatives of the Upjohn organisation throughout the British Commonwealth have been meeting at the company's headquarters in Kalamazoo, Michigan, U.S.A., to discuss plans for an expansion of the company's international programme, including the planning and construction of a building for the recently established Sydney subsidiary Upjohn of Australia. Left to right in the group are Messrs. C. J. Farrington (architect, Sydney); Malcolm Tapper (production manager, Upjohn of England, Ltd.) and David Tucker (production manager, Upjohn of Canada), Dr. Kenneth R. Crawley (medical director, Upjohn of Canada); Messrs. E. D. Cronin (sales manager, Westdene Products (Pty.), Ltd., sole distributors of Messrs. Upjohn's products in South Africa); Alan J. Stahl (production manager, Upjohn of Australia) and Arthur Foote (office Manager).

SAFETY AND FACTORY EFFICIENCY EXHIBITION, Bingley hall, Birmingham, June 14-21.



"BABY - CORNER"
DISPLAY: Following up what they describe as their outstanding success with a "baby corner" display stand in 1956, S. Maw, Son & Sons, Ltd., Aldersgate House, Barnet, Herts, have launched an improved version in metal and plastic, re-designed to occupy less counter space. The Mark II "baby corner" stand is supplied free with a token order (value 15s. 3d. after discount allowances) for the company's major nursery products. Most of the products displayed are nationally advertised in women's journals as obtainable from chemists only.



At left of page: Personal weighing machine: a new model now being marketed by George Salter & Co., Ltd., West Bromwich.

ORGANIC COMPOUNDS IN ANALYTICAL WORK

Importance of chelates

ALTHOUGH much progress has been made in recent years in applying organic compounds to the analysis of both inorganic and organic substances, investigation of organic compounds as analytical reagents had not as yet completely passed the hit-or-miss stage, said Mr. J. C. PATEK at a recent meeting of Edinburgh and South-eastern Scottish Branch of the Pharmaceutical Society.

The real start had not been made until 1905, when the Russian chemist Tschugaëff reported the use of dimethylglyoxime as a reagent for nickel. Today the search was concentrated on those compounds possessing certain reactive groups which enabled them to form ring structures containing a metal atom—the inner complex salts or chelates.

In analytical chemistry a distinction was drawn between general, specific and selective reagents. Hydrogen sulphide was a general reagent, because it could effect the separation of many metals as insoluble sulphides. On the other hand potassium ferricyanide was a specific reagent and under particular experimental conditions indicated one substance only. It reacted with ferrous salts to form the well-known blue precipitate of ferrous ferricyanide and since no other substance did that, it was specific. It was frequently possible to adjust reactions with general reagents in such a way as to limit their activity and thereby make them more selective—that was, make them characteristic of one of a small number of substances. Silver nitrate was a group reagent for acidic radicals, but if it was applied in the presence of nitric acid the very insoluble precipitates which were formed were those derived from chlorides, bromides, iodides and certain cyanogen acids.

Colour Reactions

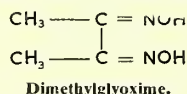
Water was the only inorganic solvent which could be conveniently employed. Therefore, as long as water alone was used, separations and colour reactions useful in analysis were limited to those which could be successfully carried out in an aqueous medium. With the use of a wide variety of organic solvents—alcohols, esters, ketones, aldehydes, ethers—the chemist was able to effect separations which otherwise would be difficult or impossible. Further, the solubility of certain salts was decreased by the addition of such liquids making a complete precipitation possible. Typical was the addition of ethyl alcohol to an aqueous solution of a lead or calcium salt to make possible a quantitative precipitation of the appropriate sulphate. Organic liquids immiscible with water made it possible to extract and concentrate many compounds more soluble in the organic solvent than in water. That was illustrated by the addition of ether in the test for chromium, based on the conversion of chromium to perchromic acid or by the use of carbon tetrachloride in testing for free iodine or bromide. Organic acids and bases and their salts were commonly

used as standards in analysis and in the preparation of buffer solutions. Many organic acids were used to form analytically valuable salts such as calcium oxalate and also for the formation of complex ions and molecules.

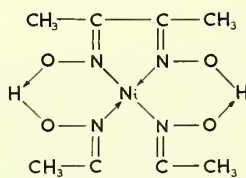
The number of organic reagents which have been used as oxidising agents was limited, but some of those, such as chloramine and methylene blue, were extremely useful. Reducing agents had numerous applications in analytical chemistry and the number of organic substances used for that purpose was large. For example, molybdenum, phosphorus and silicon might be determined colorimetrically after reducing the complex phospho- and silicomolybdates to the blue reduction products with hydroquinone, phenylhydrazine or 1,2,4-aminonaphtholsulphonic acid. The use of ascorbic acid as a reducing agent in titrations was one of the more interesting recent applications of a well-known chemical to analytical purposes, and was based on its reduction to dehydroascorbic acid in acid solutions. The principal use had been in the titration of ferric iron and the main advantage appeared to be that solutions of ascorbic acid were rather more stable than those of most other powerful reducing agents.

Search Instituted

Since the early days of analytical chemistry organic compounds had been used as wash liquids, solvents, indicators and salt-forming compounds but the real start was not made until 1905 when the Russian chemist Tschugaëff reported the use of dimethylglyoxime



as a reagent for nickel. With the knowledge that that substance was a specific, or at least a highly selective reagent for nickel and that it was extremely



Bis-dimethylglyoxime nickel.

sensitive, many analytical chemists instituted a search for additional organic reagents which might prove superior in specificity and sensitivity to reagents then in use. The search was very much empirical in character, since relationship between structure and analytical function was then not fully understood. Even at present the investigation of organic compounds as analytical reagents had not completely passed the hit-or-miss stage. That search had to a great extent been concentrated on those compounds possessing certain reactive groups which enabled them to form ring structures containing a metal atom.

Those compounds were called inner-complex salts or chelate compounds. Those compounds were generally characterised by their low solubility in water, and since in many instances they were highly coloured, they were of unusual importance in their analytical applications. There were a great variety of structures which had chelating properties and a distinction was drawn between the products of chelation, the insoluble chelates, and sequestrates. Sequestration was limited to those cases of chelation when the chelate was soluble in water.

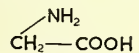
The properties of those compounds differed profoundly in many respects from normal salts. They were usually insoluble in water but soluble in non-polar solvents, and because of that, small quantities of metals could be extracted from aqueous solutions with immiscible liquids by first converting to an inner-complex salt. In many cases there were distinctive colour changes. Those reagents were frequently specific and as a rule highly selective in their reactions with inorganic ions. The precipitates formed in many cases were in a suitable weighing form, and the ions to be determined were often a part of a heavy complex of favourable conversion factor.

Among the organic compounds used, the most important were those containing salt-forming groups which, because of their structure might also be able to form inner complexes. Such groups, essential for the formation of chelate rings, contained the most commonly occurring acidic radical, namely the hydroxyl group. In addition to alcohols, phenols and certain enolic compounds, many other well-known acidic compounds might be regarded as containing the —OH group, joined to the hydrocarbon nucleus through the agency of some other group. Thus, the carboxyl group could be regarded as formed by inserting the carbonyl radical between the hydroxyl group and the organic radical. Similarly, when N, NO, SO, SO₂, As, AsO groups joined hydroxyl and organic radicals, the oxime or enolic form of the nitroso group (N—OH), the nitroxyl or enolic form of the nitro group (NO—OH), sulphonic acid (SO₂—OH), sulphonic acid (SO₂—OH), arsinic acid (As(OH)₂) or arsonic acid (As(OH)₂O) groups, respectively, were formed. The mercapto or thioalcohol group, again by interposition of carbonyl or thiocarbonyl groups, yielded analytically important thiocarboxylic and di-thiocarboxylic acids. The only other radical which appeared to impart acidic properties to organic molecules was the imino group. That was the weakest of the acid groups and occurred in only a few compounds of analytical importance.

Inner-complex Salts

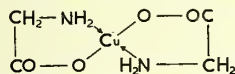
Aminoacetic acid or glycine was typical of the compounds containing groups capable of forming inner-complex salts. At some pH levels it did form normal salts, but with suitable

metals, such as copper or cobalt, and within certain pH limits it acted as a



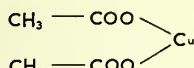
Aminoacetic acid.

chelating agent. At a suitable pH the ionic bond between the carbonyl group and the metal ion ceased to be truly ionic and became to a considerable



Copper complex of aminoacetic acid.

degree, perhaps even entirely, a co-ordinate one. The copper salt so obtained was quite different and could be distinguished from true salts such as copper acetate in that it did not add



Copper acetate.

ammonia and its aqueous solution was practically non-conducting. It was in fact an inner-complex with a five-membered stable ring structure. The single co-ordinate bond was usually broken more easily than a normal covalent link and the functional groups responsible for the ring formation took part equally in reactions which resulted in the opening of the ring.

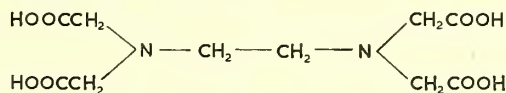
The inner-complex or chelate rings were of three types, based on the character of the bonds present in the system. Rings in which the co-ordinate bond became identical with a normal covalent link as a result of chelation were classed as type A; rings containing one definite co-ordinate bond were denoted as type B; and complexes containing two co-ordinate bonds were denoted as type C.

The central group of the dimethylglyoxime molecule was the group apparently responsible for the formation of the scarlet nickel derivative, insoluble in water but soluble in many organic solvents, a non-electrolyte and non-polar in character—in fact an inner-complex salt.

The reason why dimethylglyoxime was specific for nickel was most satisfactorily answered by Sharpe and Wakefield. The x-ray investigation of the structure of the nickel derivative revealed that the planar molecules of the compound were so arranged, with planes parallel and nickel atoms of adjacent molecules only a very short distance apart, as to indicate weak metal-to-metal interaction. It was on that evidence that the explanation of selectivity—the difference in solubility between the nickel complex and say the copper complex—of dimethylglyoxime was based, as the lattice energy resulting from the metal-metal interaction stabilised the nickel complex in its solid phase.

One of the more interesting applied uses of dimethylglyoxime was in the detection of adulteration of natural fats by hardened oils. That was done by detecting traces of nickel catalyst that remained in the hardened oils after hydrogenation.

An important development in analytical chemistry of recent years was known as chelatometry or complexometric titration in which the particular organic reagent employed was, as a rule, the disodium salt of ethylenediamine tetraacetic acid (EDTA). EDTA had become one of the most widely

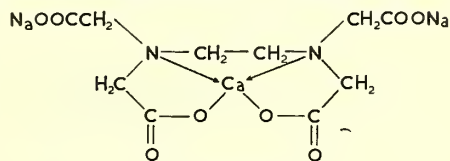


EDTA.

used complexones because it formed in general, the most stable complexes and because it was cheap and readily available being manufactured in large tonnages for technical purposes such as soap manufacture and the processing of textiles. EDTA or sequestric acid reacted with a large number of metals, direct titration methods for as many as seventeen metals having been published. Water analysis was one of the most important applications of sequestric acid both for the titration of total hardness and for separate determinations of calcium and magnesium. Total hardness could be titrated using Eriochrome black as indicator, the colour change taking place when both metals had been complexed. Separate determinations of calcium used a more alkaline solution and Murexide as indicator. A considerable improvement has been effected recently by the introduction of a new indicator which permitted an accurate titration of calcium in the presence of magnesium. The new indi-

cator was an azo dye which produced a sharp, stable colour change from wine red to blue at pH 12–14. The indicator was made available to British analysts by a Scottish firm and was finding general application in the analysis of water, sewage, salt, limestone and boiler scale.

Mr. Patek concluded by mentioning a group of chemically unrelated substances which had come into prominence as organic reagents within the last few years. They included Thorin (thorium and zirconium reagent); Uranol and Arsenazo (a dye reagent giving a blue colour with uranium in concentrations down to 1 part in 5



EDTA calcium complex.

million parts); *p*-bromomandelic acid (a precipitant for zirconium in gravimetric methods); phenylfluorone (a selective reagent for the determination of germanium); 4-aminophenazone (detection of phenol in concentrations of 1 part in 1 million parts of solution).

MACHINERY AND PLANT NOTES

Stirrers.—A range of stirrers for laboratory, pilot plant and production use is supplied by the Fluid Equipment Co., Ltd., 9 Dorchester Court, Southgate, London, N.14.

Carbon Ejectors.—A range of carbon ejectors of both water-operated and steam-operated types, capable of handling all corrosive fluids, are obtainable from Powell Duffryn Carbon Products, Ltd., Springfield Road, Hayes, Middlesex.

Mixers.—Six bench and floor-model mixers with capacities of 10, 12½, 20, 30, 50 or 80 quarts are obtainable from The Hobart Manufacturing Co., Ltd., Hobart Corner, New Southgate, London, N.11. Full details are obtainable from the company.

Centrifugal Filters.—Electrically driven high-speed centrifugals for the processing of freely filtering materials and non-filtering slurries, and with types and sizes ranging from 9 to 72 in. basket diameter are marketed by Thomas Broadbent & Sons, Ltd., Huddersfield, Yorks.

Agitating Equipment.—A wide range of fluid agitating equipment for skin lotions, hand creams, medicinal products, etc., the type of mixer depending on the quantity to be mixed and the viscosity of the solution, is obtainable from L. A. Mitchell, Ltd., 37 Peter Street, Manchester, 2.

Filling Machines.—Albro vacuum-operated filling machines fill all liquids and semi-liquids, including oils, emul-

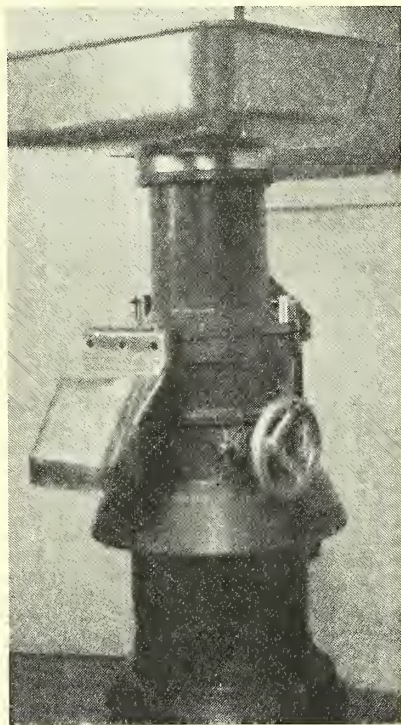
sions, acids, perfumes, syrups and spirits. Full details are obtainable from Albro Fillers & Engineering Co., Ltd., Wharf Road, Ponders End, Middlesex.

Tube Filler.—A new Flexifiller designed for the rapid handling of small-scale tube filling orders has been developed by Flexile Metal Co., Ltd., 796 Holloway Road, London, N.19. All contact parts are of stainless steel and can be autoclaved. Interchangeable pistons and easy adjustment enable the Flexifiller to fill a wide range of sizes with high accuracy. The machine is suitable for tubes, jars, tins or bottles.

Compression-coating Tablet Machine.—The Drycota combined tablet-making and compression-coating machine made by Manesty Machines, Ltd., 5 Evans Road, Speke, Liverpool, 19, provides exact centring, positive feeding, controlled pressure and automatic core check. The machine ensures that cores—made and coated simultaneously—can be softer resulting in improved integration of core and coating and improved disintegration of the product.

Punches and Dies.—Manesty Machines, Ltd., Speke, Liverpool, 19, are now stocking a complete range of punches and dies for the Manesty hand, E2 and F3 tablet machines and the B3A, D3A and BB3A rotary tablet machines, in flat, shallow concave, normal concave and deep concave, all sizes from 7/32 to ½ in. diameter inclusive, in 1/32 in. sizes, excluding 15/32 in., as well as many other sizes for which there is a constant demand.

Stainless Steel Vessels.—A new range of standard production stainless steel vessels is announced by T. Giusti & Son, Ltd., 210 York Way, King's Cross, London, N.7. Storage and mixing vessels are offered in a variety of types and in capacities ranging from 10 to 2,000 gall. Standard models are offered with alternative types of top edge stiffenings, legs, lids and outlets, depending on the size and purpose of vessel and gauge of material. Based on their customers' most popular requirements, the company produce hemispherical jacketed vessels ranging from 7 to 50 gall. Inner vessels are of dull polished stainless steel and jackets are in mild steel. Alternatively, the jackets can also be offered in stainless steel. The range of dished jacketed vessels from 25 to 200 gall. is in two types. One has a bolted-on jacket whereas the other has a welded jacket. The standard vessels are designed for a working pressure of 40 lb. per sq. in. and are hydraulically tested to 80 lb. per sq. in.



One of the new Giusti stainless steel vessels. Foodtech "super" grinder.

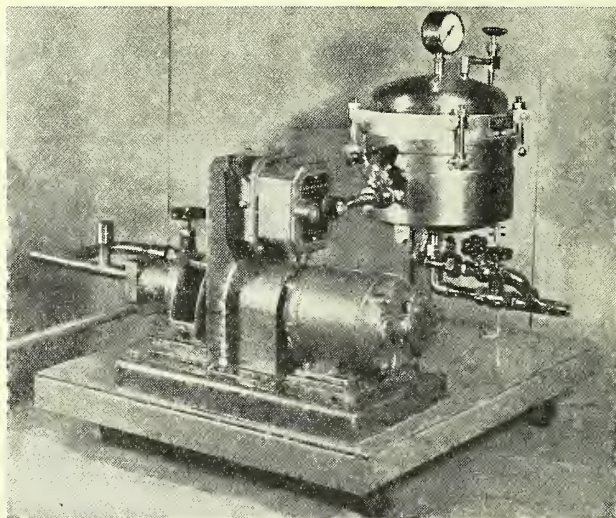
Electric-jacketed Pan.—The Stabilag Co., Ltd., Hemel Hempstead, Herts, are producing, in conjunction with William Brierley, Collier & Hartley, Ltd., an electric-jacketed tilting pan. The pan is designed for use on three-phase supply, and an energy regulator controls the heat input from 0 to 100 per cent. of electrical energy. Attention has been paid to providing the unit with a clean appearance; a complete splash guard is mounted around the pouring lip to prevent ingress of contaminating materials into the heater, and in addition a great deal of attention has been given to ensuring easy maintenance for all electrical and mechanical parts. The cost of the new unit is claimed to be little more than that of an equivalent steam-jacketed vessel. No insurance test

is required, as would be the case with a steam-jacketed unit. Thinner gauge materials may be used, and the vessel can be made portable so that it may be moved out of position if required.

Laboratory Filter.—L. A. Mitchell, Ltd., 37 Peter Street, Manchester, 2, are

acting as sole selling representatives for Great Britain of a laboratory Sparkler horizontal plate filter of American design. For the European market the filters are manufactured in Holland, so that there is no difficulty with the supply or importation. The Sparkler horizontal plate filters are specially designed to give a high polish and clarity to solutions from which it is desired to extract about 5 per cent. of solids. It is extensively employed in the United States by the chemical processing industry, oil and petroleum refineries, and in the pharmaceutical industry. The Sparkler filter gives exceptionally high filtration rates, and is extremely easy to clean, and by virtue of a patent scavenger plate no liquid is wasted. The great advantage of the filter for the pharmaceutical industry is that it is completely sanitary. The filters are produced for industrial use in stainless steel, mild steel or rubber-lined construction, according to the nature of the liquid to be clarified or filtered. Messrs. Mitchell have a number of the laboratory filters available for carrying out tests in clients' works on their solutions. By arranging such practical tests with the small filters, the client is able to appreciate the advantages and system of operation, and to satisfy himself of the results that can be obtained. Sparkler filter plates can be easily taken apart and every inner surface completely cleaned, brushed and washed. No inaccessible screen support is present in Sparkler plates. The cake rests on a horizontal support and pressure is not

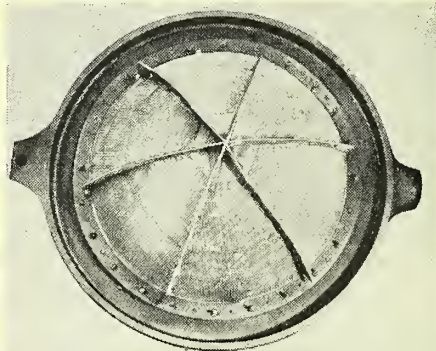
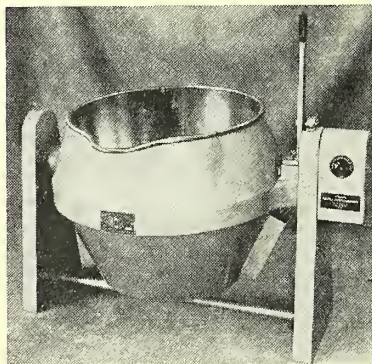
required to hold the cake on the plate. The cake rests on the horizontal plate without danger of breaking or slipping, it is built up in uniform thickness as flow is always with gravity. Intermittent operation will not damage the cake. Any filter media, any type of filter paper or cloths including synthetic material or



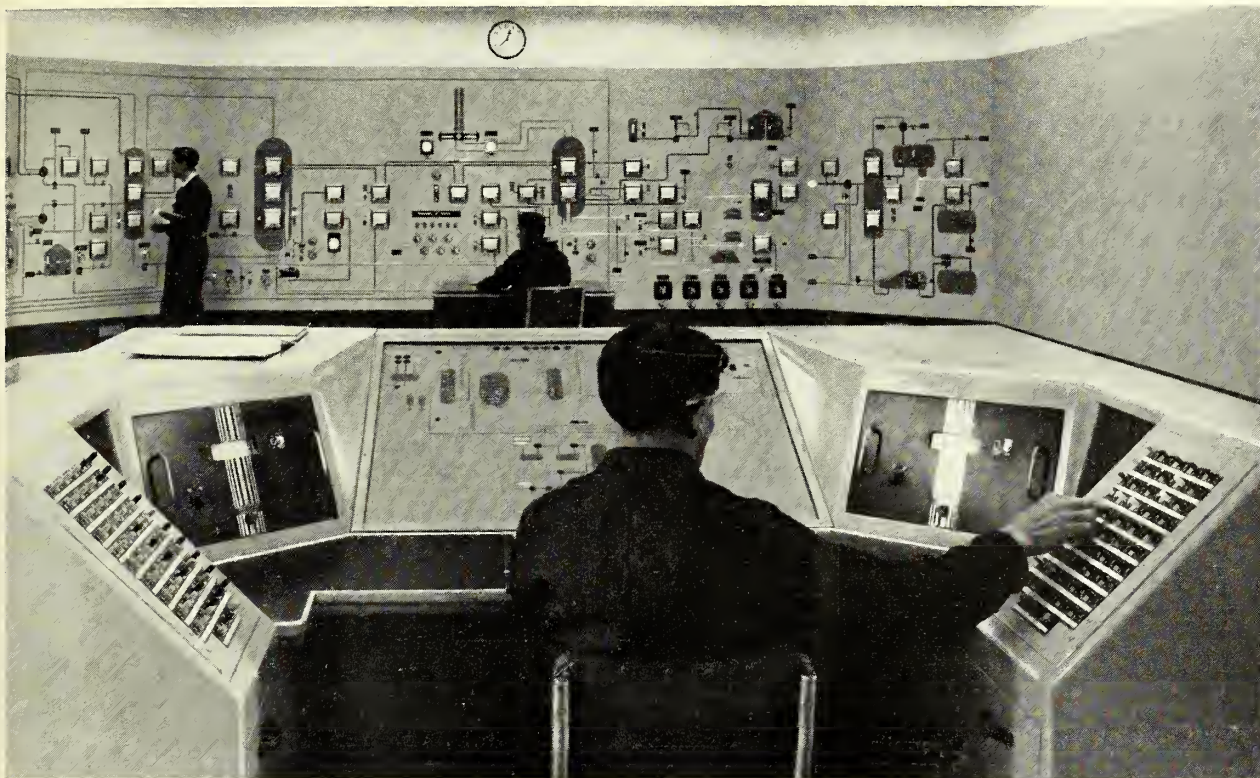
Laboratory sparkler horizontal plate filter.

any wire cloth or screens can be used with maximum efficiency in Sparkler horizontal plate filters. Large drainage space is provided on the under side of the filter media support so that flow friction is greatly reduced, assuring an unobstructed outlet for filtered liquid.

Agency for a Bonded Plastic.—Under an agreement with Mendip Chemical Engineering, Ltd., Russell Constructions, Ltd., chemical plant engineers, become sole agents for Resilon synthetic-resin-bonded reinforced plastic. From Resilon are produced such important items of chemical plant as fume ducting stacks, scrubbing towers, drainage effluent systems, storage tanks, pipelines, tank covers, process vessels and vacuum filters. Grades of Resilon are available that are claimed to meet most acid conditions (even hydrochloric acid at constant boiling mixture and aqua regia), etc. Inquiries should be sent to Messrs. Russell at Russell House, Adam Street, Adelphi, London. W.C.2.



Prototype of electric-jacketed tilting pans (The Stabilag Co., Ltd.). On the right is seen a plan view showing the heater construction formed into intimate contact with the hemispherical base of the pan.



INSTRUMENTATION :

Powerful aid to Production

AN article on instrumentation has a rightful place in the Machinery Number of *THE CHEMIST AND DRUGGIST*. For though the type of instruments referred to may not be classified as machinery, they do nevertheless assist to an important degree in obtaining the most efficient performance from production plant as a whole. In many reports of the annual meetings of companies—often in the chemical and pharmaceutical industries—it has been stated that it has been possible to offset the general rise in raw materials and labour costs by increasing the efficiency of production; and in certain instances the use of instrumentation has been mentioned as one of the chief methods.

Practical Advantages

The practical advantages of comprehensive instrumentation—which is considered to include the automatic control of processes—may be recapitulated briefly. They may be said to include increased output, greater uniformity of product, easier processing, fewer rejects, better utilisation of manpower, and greater safety to personnel, plant and property.

Though it is not suggested that instrumentation is by any means a new tool, there is no doubt that it can be considered an old tool that has often not been put to greatest use.

The high state of efficiency to which

present-day instrumentation can be brought is probably best appreciated by a short study of its development, and by noting the disadvantages of instruments of earlier days and their arrangements.

Development of Instrumentation

Thirty years ago practically the only instruments used in industrial processes were those for the measurement of simple physical conditions—now known as process variables—such as temperature, pressure, rate of flow, and so on. In the measurement of a rate of flow, for instance, a meter was usually installed at or near the point at which the flow could be controlled—that is, near the valve. The operator in all probability had to stand by constantly to make alterations or corrections in the rate of flow as conditions required; or—if he had several valves under his care—he had to proceed from one to the other noting the readings on the indicators, and making the necessary adjustments to the valves. The job was tedious, and often had to be carried out in unpleasant surroundings, necessitating, in large plants, the scaling of ladders, and going to out-of-door locations accessible only with difficulty. Later a means was evolved to enable several indicating instruments to be grouped together—usually on a centralised instrument panel. That was a definite advantage, since the panel

would be under cover and readings of several related instruments could be watched almost simultaneously, and the necessary correction made to the nearby valve wheels. That arrangement, however, necessitated the bringing of impulse lines—that is, tubes carrying the actual fluid to be measured—into the control room, and involved a definite hazard if tubes broke, became disconnected or leaked, especially when containing an inflammable, explosive or otherwise dangerous gas or liquid.

As plants grew more extensive and operations more complex, instruments became more numerous and panels larger—some approaching a length of 100 ft. or more. The task of “keeping an eye” on so many instruments became difficult, and the overall cost of instrumentation involving a very large and specially built control room tended to become prohibitive.

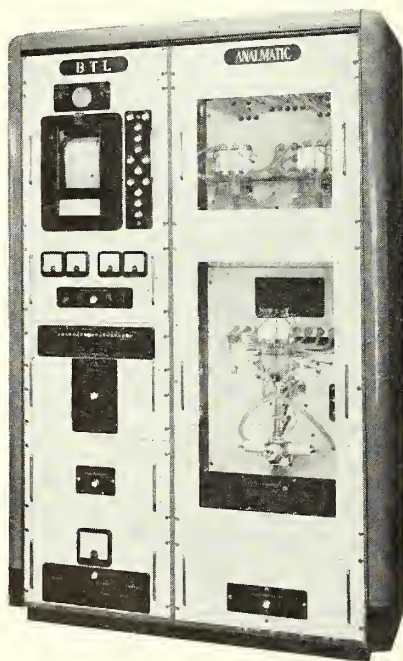
Pneumatic Transmission

A great step forward in instrumentation—which has only recently been developed to the full extent—was the introduction of the system of remote transmission, which not only over-

Title picture shows a modern control room with instrument panel of the “graphic” type, and control console. Miniature instruments to record and control flow, pressure, temperature, levels and so on, are let into the panels at positions corresponding to those at which they operate on the plant. Photo, Esso Petroleum Co., Ltd.

came many of the previous shortcomings, but brought with it many additional advantages. Though remote transmission can be carried out by more than one means, the pneumatic system is the one used most widely in the chemical and pharmaceutical industries, and so emphasis will be given to that method. The term transmission is used because, for instance in the pneumatic system, changes in the value of the process variable to be measured—temperature, pressure, and so on—are, in effect, converted into corresponding changes in an air pressure; that is transmitted along a small-bore tube to actuate the receiving instruments—an indicator and/or a recorder—which may be located at any distance up to 100 ft. or so away, or an air-operated automatic controller. Hence the name pneumatic transmitter is usually applied to the device that performs that function, though the term pneumatic converter is also used, for equally obvious reasons.

The advantages of the system are many. As tubes containing only low pressure air enter the control room the increased safety to operators is at once apparent. The freedom from introduction of any additional risk of fire or explosion is another valuable factor where highly inflammable or explosive fluids are being handled, as in an oil refinery. The system permits measurements to be made with greater accuracy and with a quicker response to changing conditions. Also, a very wide variety of fluids can be measured—liquids or gases, cold or hot, at high or low pressures, and acid or alkaline.

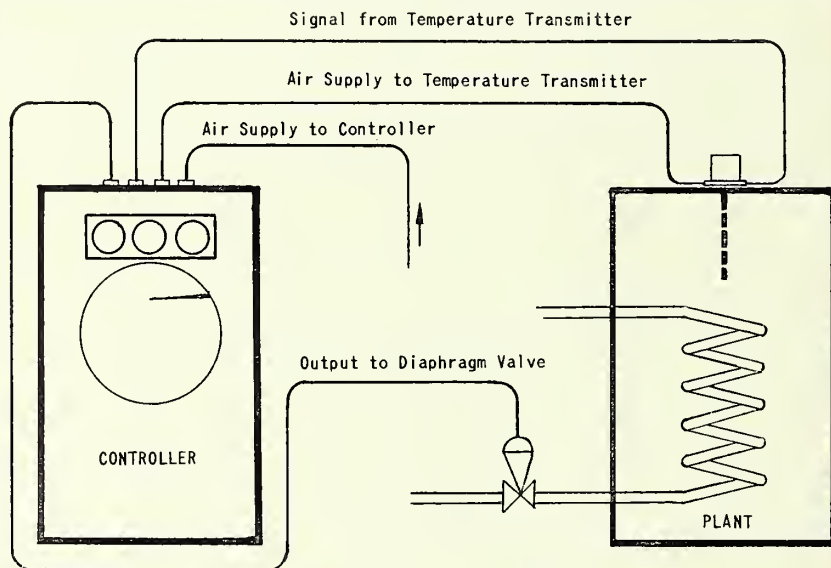


An automatic laboratory which, by carrying out routine analytical work, enables trained staff to be released for more rewarding duties. The model shown is the B.T.L. Analmatic uranium analyser, Mark II. Photo, Baird & Tatlock (London), Ltd.

The basic principle of operation of a pneumatic transmitter is ingenious but simple. Thus in such an instrument operating on the widely-used

"force-balance" principle, the variable that is being measured is caused to develop—by means of a suitable measuring unit—a force, the value of which is determined by the value of the variable itself. In the case of the measurement of temperature, the force

another great advance in instrumentation—panels of the "graphic" or "mimic" type. The instruments can be displayed in their correct relative positions superimposed on a flow sheet or diagram of the plant, and interconnected with lines of various colours



Diagrammatic representation of automatic control of temperature. The temperature of the plant is sensed by the temperature-sensitive element of the air-operated temperature transmitter and an air pressure is transmitted to the controller which produces another air pressure to actuate the diaphragm valve regulating the source of heat to the plant.

may be developed by the expansion of mercury or other liquid or vapour within a closed system, according to the temperature; or in the case of measurement of the rate of flow the force may be the pressure developed across a device in the flowline such as an orifice plate or a Venturi tube. In either case an air pressure is built up automatically and practically instantaneously to balance that force exactly, so that in measuring that air pressure—which bears an exact relationship to the value of the variable—one is, in effect, measuring the value of the variable itself. The reading instrument—the indicator—connected to the other end of the tube through which the pressure is transmitted, is in reality an ordinary pressure-measuring instrument, but calibrated in units suitable to the variable being measured: they may be degrees Fahrenheit or Centigrade, or gallons per minute or per hour.

The modern "force-balance" pneumatic transmitter is an instrument of high accuracy and efficiency. Such undesirable attributes as friction, wear, inertia and hysteresis have virtually been eliminated as the maximum movement of any moving part is of the order of 0.002 in.

Another more recent innovation of great importance is the miniature type of instrument which, whilst possessing an equal degree of accuracy with its full-size counterpart, takes up far less space. Consequently many miniature instruments can be mounted on a panel of reasonable size, or arrayed on a control desk or console, to provide the greatest operational convenience.

The introduction of miniature instruments also has made possible

according to the substance the pipe is carrying. The operator is thus not only put in possession of a very realistic impression of the layout of all the processes and the co-ordinations, but he finds his job easier to perform, more interesting, simpler to learn, and probably he is able to take quicker action in emergency.

Automatic Process Control

Automatic control of processes followed as a logical sequence to the wider use of measuring instruments. For when the best combination of physical conditions for a given process had been established by precise measurement, the desirability of maintaining those conditions within the closest possible limits with the least possible human effort was obvious. And it is not too much to say that modern automatic control methods have not only made that wish a reality, but have enabled co-ordinated control schemes of great complexity to be controlled far more efficiently and consistently than would be possible with a team of human operators however experienced or conscientious. Indeed, it is considered that it has permitted many continuous processes to be evolved and operated that previously would not have been practicable.

To say that automatic control permits no deviation at all of the variables from the desired value is incorrect; for an automatic controller depends on a deviation—even so slight as to be almost imperceptible to human faculties—which it immediately takes steps to correct. Thus the first step in what is known as the "closed loop" system of automatic control is for the actual or present value of the

variable to be measured or "sensed" by a measuring unit, as previously described; that value is then converted into a corresponding air pressure—by a pneumatic transmitter—and conveyed to the controller itself. There the air pressure which represents the actual value of the variable is compared with another imposed air pressure which represents the desired value, and an output air pressure is developed which represents the difference between them, that is, the degree of deviation of the actual from the desired value. That output air pressure is applied to the regulating unit—usually an air-operated diaphragm valve—which is thus caused, by opening or closing, to take appropriate corrective action to restore the actual value to the desired value. In practice all the operations take place with such speed as to be practically simultaneous.

Basic Outline

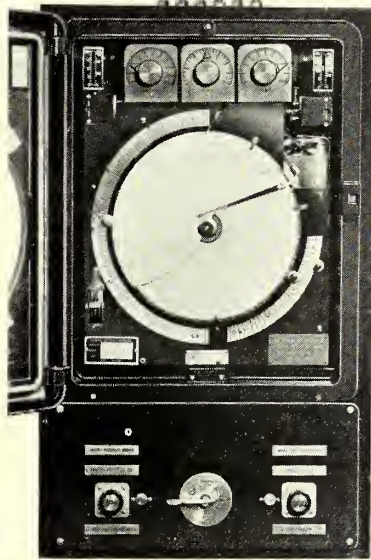
There is no need here to consider in detail the application of automatic control to specific chemical processes, or for the preparation of particular pharmaceutical products, as in basic outline the methods will be in many ways similar, no matter whether the plant involved operates on a simple batch system or is employed on a highly complex continuous process.

The process plant and means of operation will usually determine the form of control that is required. Single-term or proportional control—in which the movement of the regulating unit (e.g. the diaphragm valve) is always in proportion to the degree of deviation—is suitable for simple applications; when changes of load and other factors have to be allowed for proportional plus integral or proportional plus derivative (two-term) con-

For plant that works on the batch system and in which the same sequence or cycle of processing has to be carried out each time, a programme controller is of great use. In most models the programme or procedure to be fol-

lowed is governed by a cam which has been cut to a special shape according to the conditions of temperature or pressure required with respect to time. In operation, the cam revolves at the required rate, the profile maintaining contact with a lever which is caused to move and alter the "setting" or desired value of the variable throughout the process, as required. In the latest type of programme controllers, however, no cam is used, as the programme to be followed is set or predetermined by adjustments of air pressures according to calibrated scales. Setting is thus much more simple and the programme can be altered or modified as required in a few seconds.

Another factor that will prevent the introduction of automatic control to a maximum extent is limitation in the capabilities of measuring units. The types that have been mentioned—for

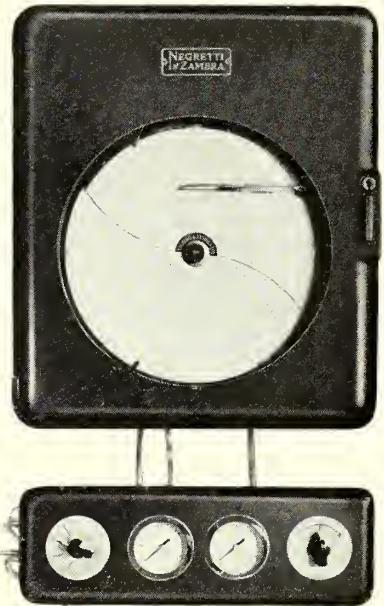


An air-operated programme controller (door open) for processes. The required conditions of temperature in relation to time are preset according to calibrated scales. The procedure to be followed can be set or any change in the programme made in a few seconds. Proof that the programme has been carried out as required is shown by the recording on the chart.

Photo, Negretti & Zambra, Ltd.

lowed is governed by a cam which has been cut to a special shape according to the conditions of temperature or pressure required with respect to time. In operation, the cam revolves at the required rate, the profile maintaining contact with a lever which is caused to move and alter the "setting" or desired value of the variable throughout the process, as required. In the latest type of programme controllers, however, no cam is used, as the programme to be followed is set or predetermined by adjustments of air pressures according to calibrated scales. Setting is thus much more simple and the programme can be altered or modified as required in a few seconds.

The obvious and inevitable question that arises in considering the high efficiency, dependability and flexibility of modern automatic controllers is whether in a comparatively short time human operators will be found redundant, and industrial unrest and hardship ensue. The answer is that such an unhappy state is unlikely. In any case it is often possible for operators to be upgraded to better-paid positions as supervisors or maintenance men. Furthermore there are several factors that will limit the adoption of automatic control at such a speed that it would become a menace instead of a benefit. The chief reason is that in order to apply automatic control to processes to ensure an absolute maximum of efficiency, a great deal of study must be made of the process conditions themselves, the plant, and its "controllability"—that is, its design

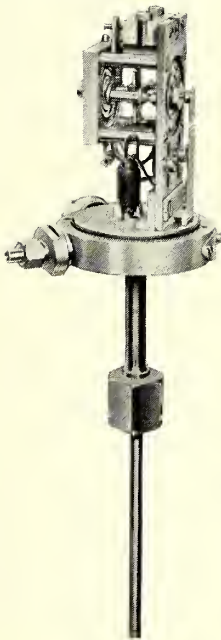


An air-operated automatic process controller employing three-term control—proportional, integral and derivative. The value of the process variable (temperature, pressure, etc.) being controlled is also recorded on the circular chart. Auto/manual/test/service facilities are provided by the controls on the separate panel. Other models embody those controls internally.

Photo, Negretti & Zambra, Ltd.

rate of flow, temperature, and so on—have, of course, been in use for many years. But means of measuring many physical qualities have not yet been devised and what are needed are measuring elements that will "sense" or measure that indefinable factor known as product quality. For—as is realised—the ultimate object is to manufacture products of a given and uniform standard. If a means of sensing and assessing the factors that contribute to that standard constituting product quality could be devised,

A temperature transmitter (cover removed) for the local or remote measurement of temperature. The instrument is pneumatically operated and uses the "force - balance principle" — the maximum movement of any moving part being two - thousandths of an inch. Pneumatic transmitters are also used for the indication, recording and control of rate of flow of fluid, pressure, liquid level, liquid density, etc. Photo, Negretti & Zambra, Ltd.



control may be required; and for more complicated cases three-term (proportional plus integral plus derivative) may be called for, the third term—in effect—taking into account the rates of change of conditions.

together with a means of co-ordinating all the other factors of the process that combine to produce a product of that standard, a very valuable contribution towards complete automatic control would have been made. The present method of ensuring product quality—in the case of many products—by means of constant laboratory analysis is, on the face of it, a time-wasting and laborious procedure, requiring skilled operators who could otherwise devote their time and effort to more rewarding duties. Much work has been done towards attaining and maintaining product quality by the use of infra-red spectroscopy, mass spectrometry, *x-ray* photometry and gas chromatography but much remains to be done. It is interesting, though, that self-contained equipment—an automatic laboratory, as it is called—has been produced for the carrying out of routine analytical work. All the operations normally performed manually are conducted automatically, including the abstraction of a measured sample of the liquid to be analysed, the addition of reagents, their thorough mixing by means of a stream of gas bubbles, the passing of the liquid to an absorptometer for the colour of the mixture to be compared with that of a standard cell, and the recording of the results on a chart. Such apparatus can be devised for the performance of many types of analyses, and its construction on the unit-system facilitates alterations or modifications for different analyses.

Though a means for linking the apparatus to an automatic control system for every case has yet to be evolved, such equipment must obviously have an important future.

Economics

No article on comprehensive instrumentation would be complete without some observations on the economic aspect. The practical advantages to be expected have already been alluded to; and the fact that such objects can be attained without the overall costs being prohibitive—in short, that instrumentation does pay—has been proved by the rapid and ever-increasing rate at which it is being adopted, irrespective of the limitations mentioned. Of course, as practically all applications differ, no general statement can be made as to the length of time necessary for an installation to offset its own cost, but it has happened frequently that in the savings effected, instruments have paid for themselves in six months, and in many cases within a year.

There are other economic considerations. As has been stated, instrumentation is best incorporated into plant in the design stage. And in many such cases it has been found possible to alter radically the design of the plant as made possible by the automatic control adopted, and the overall cost of the plant has been reduced to a considerable extent. Such instances include those in which it has been possible to supersede the batch system by continu-

ous processing. The former method often necessitates relatively large plant to accommodate the large volume of material being processed all at the same time; in the latter method only a comparatively small quantity of material is being processed at any given moment, so that the plant need not be so large or so costly to obtain the same total throughput. Further in such cases, the amount of floor space saved is another factor that can often be reckoned as a considerable financial saving.

The number of operatives that will no longer be required on any given plant after the installation of instrumentation is always difficult to estimate. In any case, such an approach to the matter is fundamentally inadvisable. It is better for many reasons to consider that—as is actually the case—they will be liberated for less monotonous and more lucrative duties. It is certain, too, that some, if suitable for training, can be retained on the plant for maintenance and testing duties.

Summed up, without indulging in any dramatic prophecies, it can be said that instrumentation has a highly important part to play in the modern industrial age; that by permitting the consistent manufacture of products of uniformly high quality and at a favourable price, it will not only benefit the workers themselves, the ultimate consumer, and the employer, but will assist to a great extent to ensure Britain's economic survival in a highly competitive world.

FREEZE-DRYING : *Dehydration of Sensitive Biological Materials*

FREEZE-DRYING is a modern method of dehydrating solutions or suspensions from a solid state. Its principles are akin to those of sublimation. Its application is in the dehydration of sensitive biological materials.

Figure 1 shows the relationship which exists between temperature and pressure of water in its three states and the triple point *T* is that at which the three physical forms can co-exist in equilibrium. Under conditions obtaining along *A T*, water exists as two phases, solid and vapour. If from a point *Z*, to the right of *A T*, the pressure be reduced to point *X* without change in temperature the solid ice will vaporise. If now the temperature of the vapour be reduced to a point *Y*, the vapour will condense and so be eliminated from the system.

Evaporation produces cooling (due to the latent heat required for evaporation) and the heat required for sublimation can only come from the ice at point *Z*. To counteract that and prevent temperature of the frozen material dropping to too low a level, and to ensure that drying proceeds rapidly, external heat insufficient to melt the frozen material must be applied.

Later that heat must be neutralised by refrigeration in the condenser.

It is impossible to remove all the moisture by freeze-drying alone and chemical desiccants such as anhydrous calcium sulphate or phosphorus pen-

toxide are utilised to lower the moisture content.

Spray drying or evaporation under reduced pressure are a poor second to freeze-drying. In freeze-drying there is no concentration—the evaporated solid occupies practically the same volume as the original frozen solution—so that no denaturation of proteins occur when a product such as dried blood plasma is being prepared.

Other materials commonly freeze-dried are serum, vaccines, living bacterial and virus suspensions, therapeutic and prophylactic preparations, antibiotics and tissues.

Before the material can be dried from the frozen state it must be frozen. Freezing may be carried out external to the drying chamber by refrigerators or refrigerants such as solid carbon dioxide or by vacuum freezing in the individual container and chamber from which drying is to proceed. External refrigeration is carried out by shell freezing, shelf freezing or vertical spin freezing. In shell freezing the bottles containing the liquid are rotated slowly about their axes in a bath of refrigerated alcohol. Temperatures of the order of -60°C . are obtained and the liquid freezes rapidly as a uniform shell round the

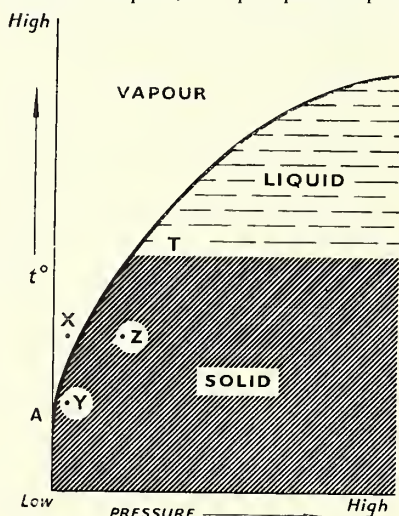


Figure 1

Facts her doctor wasn't told...

Though still in her thirties, the patient complains that she feels twice her age. She finds life a burden . . . she's constantly exhausted . . . no longer has any enthusiasm to tackle her household duties. What she doesn't confess however is that for months she's neglected her food . . . that domestic worries have led to meagre breakfasts, snack lunches and lack of variety in her daily diet.

With this type of patient how often the condition is linked with inadequate intake of B complex factors. Here it is that LEDERPLEX Vitamin B Complex provides the doctor with the soundest of prescriptions as it contains all the B complex factors of liver, and the blood-building factors vitamin B₁₂ and folic acid. When prescribed as LEDERPLEX, these essential factors afford a valuable counter-measure against malnutrition resulting from faulty dietary intake or utilization.



LEDERPLEX^{*} vitamin B complex

Each capsule contains:

Thiamine mononitrate.....	2 mg.	Inositol	10 mg.
Riboflavin.....	2 mg.	Folvite* Folic Acid	0.2 mg.
Niacinamide	10 mg.	Insol. Liver Fraction	414 mg.
Pyridoxine HCl	0.2 mg.	Vitamin B ₁₂	1 mcgm.
Calcium Pantothenate	3 mg.	As present in concentrated extractives from strepto- myces fermentation.	
Choline	20 mg.		

Bottles of 100 and 500

LEDERPLEX is also issued in tablet and liquid forms

^{*}Regd. Trade Mark

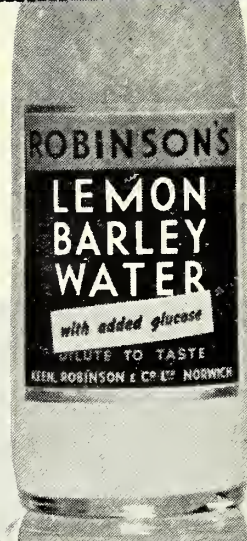
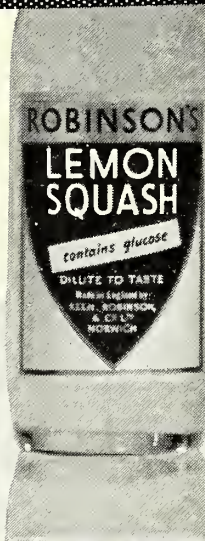
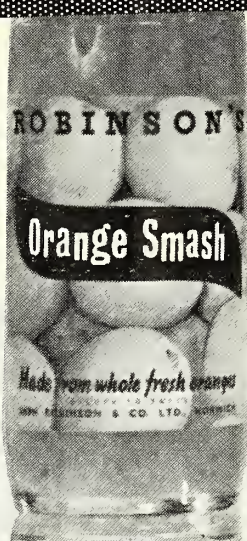
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Orange Smash is the fast-selling new orange drink made from the whole fresh fruit—the most orangey of orange drinks. Remember, too, it is being powerfully advertised in large spaces in the national press.

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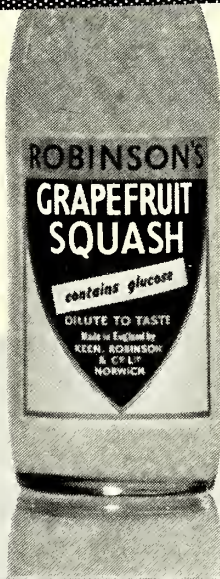
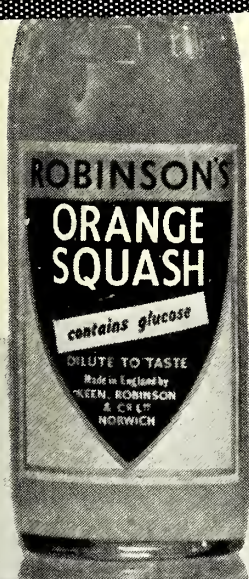
This special bonus offer will last until Saturday, 18th May and is available to wholesalers and retailers. Be sure not to miss this chance to obtain 6 bottles of Orange Smash absolutely FREE. Fill in the enquiry form now—before you forget.

Robinson's

*YOUR ORDER TO INCLUDE:- 2 dozen Sicilian Lemon Juice (4/- a bottle)
or 2 dozen Orange Smash (3/3 a bottle) or 1 dozen of each.

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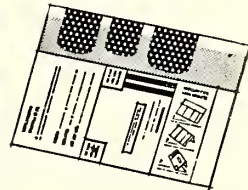
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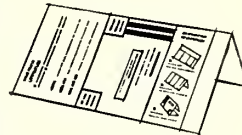
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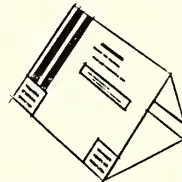
Keen, Robinson & Co. Ltd.,
Carrow Works,
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(CONTAINING AMINACRINE)

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AMINACRINE HYDROCHLORIDE, now recognised as the ideal first-aid antiseptic on account of its low toxicity and non-staining character, is the active constituent of MICROBAN, Evans Medical's antiseptic cream. Bland and non-greasy, MICROBAN is effective against a wide range of bacteria; and the name of Evans Medical guarantees the high quality of this product.

MICROBAN is issued in attractive blue tubes, and handsome display outers are provided with quantities of one dozen. A show-card is available on request.

RETAIL PRICE 1/10½ PER 25 G. TUBE.
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LIVERPOOL AND LONDON

inside surface of the bottle. An air blast maintained at -18°C . suffices in the vertical spin freezing method where the containers are spun at speed about their axes forming a cylindrical shell of frozen material. The spinning thus distributes the material to be dried in such a way that its surface-depth ratio is at the optimum for rapid drying. Shelf freezing is self-explanatory but that method does not give a large surface area of the minimal depth as provided by the preceding methods. Where small quantities of material are involved there is the risk of thawing in transference from freezer to vacuum-drying chamber and freezing under vacuum by self-evaporation is an attractive alternative. The problem of frothing on reduction of pressure, a phenomenon which beset early workers, has been largely overcome by centrifugal action at moderate speed. In this the containers are rotated within the drying chamber before and during the early stages of exhaustion. Freezing occurs rapidly giving a wedge of frozen material.

Principal Suppliers

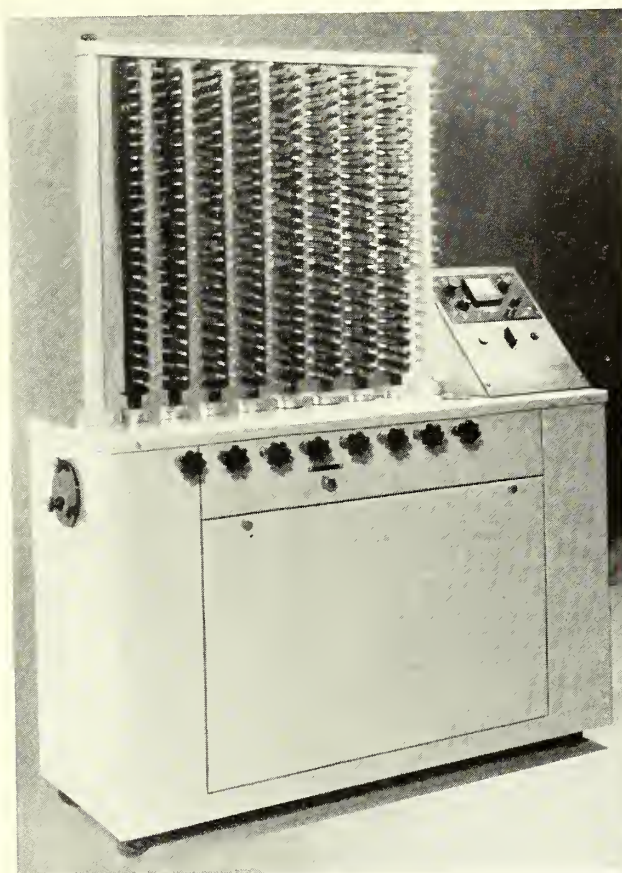
Principal suppliers of freeze-drying equipment in Britain are EDWARDS HIGH VACUUM, LTD., Manor Royal, Crawley, Sussex.

The Edwards 30P freeze-drier has been employed by specialist United Nations organisations such as the Food and Agriculture and World Health Organisations. Numbers of the machines are being used for control projects and for producing vaccines to combat smallpox, tuberculosis, rinderpest, blue tongue, swine fever and similar diseases of humans and livestock. One of the company's largest installations is at the Onderstepoort Laboratories of the South African Veterinary Services. An outstanding example in Britain is at the biological department of Glaxo, Ltd., Greenford (see *C. & D.*, December 22, 1956, p. 682) for the production of freeze-dried B.C.G. vaccine on an Edwards model 30 plant.

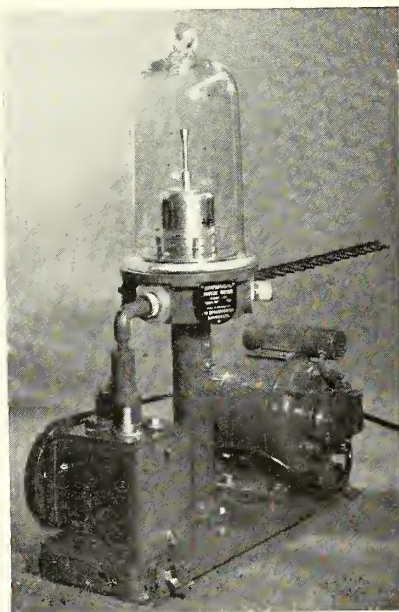
The Edwards 30P centrifugal freeze-dryer provides for self-freezing by rapid evaporation under reduced pressure in the freeze-drying chamber itself when used for ampoule- or vial-contained material or material in bulk. The containers are centrifuged during freezing to eliminate foaming of the material and to produce frozen wedges with maximum surface area and small depth to facilitate subsequent drying. Pre-frozen material in Medical Research Council bottles can also be handled. The Edwards model IVSF20 is a pre-freezing unit. The model 30P is equipped with a rotary pump and a refrigerated condenser for the water vapour load together with temperature and vacuum indicators. For two-stage drying the 30P acts as the primary dryer while the 30S is the secondary dryer, containers being transferred to it and evacuated once more by a rotary vacuum pump. Phosphorus pentoxide desiccant economically replaces a refrigerator for the absorption of the small quantity of residual moisture. Provision is also made in the 30S secondary drying unit for easy sealing of ampoules under vacuum if required.

The 30P unit is mounted in a cream-enamelled cabinet containing all the apparatus with gauges and switches mounted on a rear panel. The circular drying chamber has a readily removable lid seated on an O ring seal for vacuum-tight closure. The following accessories are provided to suit the drying of varying types and quantities of material: (a) single centrifuge plate for vials or ampoules (sixty 10-c.c. or 120 2.5-c.c. or 390 0.5-c.c. ampoules); (b) double centrifuge plate for vials or ampoules (120 10-c.c. or 240 2.5-c.c. or 780 0.5-c.c. ampoules); (c) triple centrifuge plate for vials or ampoules (1,170 0.5-c.c. ampoules); (d) bulk material centrifuge container (6 litres); (e) holder for bottles with pre-frozen contents complete with bottle heaters, heater control unit and provision for temperature measurements (sixteen M.R.C. bottles with not more than 400 c.c. charge each); (f) blank centrifuge plates are available for drilling to customers' requirements. For use with the centrifuge plates, etc., a vacuum-sealed shaft, belt-driven externally, enters the chamber from the bottom. The drying chamber is surrounded by two mat-type heaters and an adjustable thermostat is incorporated, temperature being indicated on the control panel. The water vapour condenser is connected between the vacuum drying chamber and the vacuum pump. The whole refrigerator assembly—which includes the water vapour condenser—is supported on a common base and may be removed for servicing in less than five minutes. The drying chamber and condenser are evacuated by a readily accessible Speedivac 2SC150 pump. Air-admittance to the vacuum system is via a nozzle-fitted valve which enables inert gas connections or bacterial fillers to be simply attached.

The Edwards 30S secondary dryer has a combined manifold and desiccant chamber which carries eight demountable drying headers, each having 100 rubber-covered cone connectors for vacuum-tight connection of ampoules. Each header can be isolated from the manifold by a Speedivalve for demounting and loading. The maximum capacity is 800 ampoules and those may be readily vacuum sealed *in situ* after drying. The manifold is evacuated by a Speedivac 2SC20 rotary vacuum pump. The manifold and desiccant chamber



The 30S secondary drying machine showing the eight secondary drying headers complete with ampoules.



The L5 freeze-drier mounted on the same base-plate as vacuum pump and motor and with secondary drying header in place.

is fitted with a desiccant tray, an air-admittance valve with a nozzle for connection of inert gas containers if required and a 7-1A Pirani-type gauge. A suitable header for the secondary drying of vial and bottle-contained material is under development.

The L5 series of Edwards freeze-dryers provides units of a convenient size for small-scale research and instruction in freeze-drying methods. They incorporate centrifugal freeze-drying.

The L5 series provides for self-freezing, without additional apparatus, by rapid evaporation under reduced pressure. About 20 per cent. of the water evaporates before freezing occurs but that evaporation is so rapid, under properly designed conditions, that denaturation changes are quite insignificant. Where pre-freezing before drying is the preferred method the L5 series can be used in that manner by loading the ampoule header (described below) and then placing it in a refrigerant bath or subjecting it to a cold air blast to freeze the ampoule contents. When frozen the header can be connected to the unit for drying.

Centrifugation is stopped when the material is frozen and freeze-drying continues in the same vacuum chamber without breaking the vacuum. Evaporation is sufficiently rapid to maintain the material in a frozen state until the danger of denaturation is passed. In some equipment it is necessary to supply heat to prevent the temperature falling so low that drying is retarded. In the L5 series, however, the material bulk handled is comparatively small and heat absorption from the surroundings can be relied upon for a good drying rate. The amount of water contained in the material within the L5 vacuum chamber is not sufficient to require a refrigerated surface for its removal and it can be safely absorbed by a desiccant, phosphorus pentoxide being provided for.

After removal from the centrifuge chamber the ampoule necks are constricted to facilitate sealing off and are pushed over the coned rubber connectors of an ampoule header. The header in turn is joined to the L5 base by a readily demountable $\frac{1}{2}$ -in. vacuum union and evacuated, the ampoule neck constrictions being then flame-collapsed. Each ampoule header has thirty rubber coned connectors. Transfer of the ampoules and their dried contents may be safely carried out without risk of spoilage after the water content of the material has dropped to about 5 per cent. and further drying may be carried out from the headers—in fact the drying period can be divided in that manner into two if desired.

Three models comprise the L5 series:—(1) Model LB5 (the basic bench mounting centrifugal drying unit); (2) model L5 (basic unit and Speed.vac 2SC20 rotary vacuum pump and an electric motor); and (3) model LT5 (basic unit mounted at convenient table height on a cream-enamelled metal cabinet; on a lower shelf of the cabinet is carried a Speedivac 2SC20 rotary vacuum pump and an electric motor and included is a panel-mounted Pirani-type vacuum gauge).

The base of the standard LB5 unit acts as a moisture trap with a cast body the top flange of which seats a glass bell-jar sealed by an O ring. Three moisture trap desiccant trays surround a central boss carrying a vertically mounted electric motor carrying in turn on its

shaft the centrifuge carrier plate assembly. The centrifuge carrier plate is drilled to carry a maximum of six 15.5 mm. or thirty 7.5 mm. diameter ampoules of about 2.5 c.c. and 0.5 c.c. capacity respectively. Three connections are provided on the moisture trap; two $\frac{1}{2}$ -in. Edwards vacuum unions for connecting the pump and ampoule header respectively and a gauge head connection for an Edwards Pirani-type head, type M6. An extra $\frac{1}{2}$ -in. vacuum union for an additional header is available on model LT5. The ampoule headers are supplied as accessories. Height of model LB5 is 1 ft. 5 in.; overall height of model LT5 with model LB5 mounted upon it is 4 ft. 8 in.; width of model LT5 is 2 ft. 1 $\frac{1}{2}$ in.; and depth of model LT5 is 1 ft. 4 $\frac{1}{2}$ in.

The Edwards 10P freeze-drying unit is of convenient size for small-scale production quantities and research work, handling either bottle or ampoule-contained material. The 10P is a vacuum freeze-dryer for pre-frozen material. During drying, evaporation is sufficiently rapid to keep the material in a frozen condition until the moisture or other content is low enough to avoid all danger of damage due to melting. The unit is arranged for drying in two stages, although the primary stage can be used to reduce the moisture content by weight to the order of 1 per cent. if desired. The bulk of the moisture is removed by evaporation under low pressure and frozen in a refrigerant-cooled condenser during the primary period. During the secondary drying period the refrigerant container is taken out and replaced by a tray of phosphorus pentoxide which absorbs economically the small amount of moisture remaining. An additional advantage of two stages arises when drying ampoule-contained material. The open ends of the ampoules are pushed over the coned rubber connectors of special headers which are connected in turn to the vacuum system. To cope with the first rush of vapour on subjection to low pressure it is necessary to retain the full bore through the ampoule necks, but during the change from primary to secondary drying the necks can be constricted in preparation for flame collapsing and vacuum sealing of their contents *in situ* on the coned rubber connectors at the end of the drying period. For drying of ampoule-contained material or ampoule vacuum sealing an ampoule header and a Speedivac isolation valve are required and are supplied as accessories for inclusion in the vacuum system via the cover plate gauge connector. The ampoule header has thirty coned rubber ampoule connectors.

For primary drying a suitable single-stage pump is the Speedivac 1SC50 and for secondary drying a two-stage pump is the Speedivac 2SC50. Connection to the 10P must be made by the minimum length of rubber vacuum tubing possible to reduce pumping capacity losses. A Pirani-type gauge having a pressure range from 0.5 to 0.001 mm. of mercury, such as Edwards model B2, is desirable for use with the 10P. The vacuum condenser chamber of the 10P consists of a 12 in. diameter inverted glass bell-jar, vacuum metallised to a mirror-finish to minimise radiant heat



A single tier centrifuge head loaded with ampoules showing the dried substance in a wedge-shaped form caused by spinning in the vacuum chamber during evaporation.

gains and is supported in a cradle with a metal protective guard. A plated metal cover plate seats on an L-shaped rubber gasket round the rim of the bell-jar and is fitted with six $\frac{1}{2}$ -in. copper tube spouts to which material containers are connected by rubber vacuum tubing. A further two spouts are provided for vacuum gauge and pump connection. In the centre of the cover plate is an aperture for the neck of the refrigerant-containing standard 5-litre flask, sealed in by a rubber gasket. The equipment is completed by a number of rubber bungs for sealing drying ports that are not in use. The unit has a capacity of up to 2.4 litres of ice. When using to the maximum capacity of six containers each container must be limited to 250 c.c. of material, that is the capacity of the unit is 1,500 c.c.

The Edwards model 1VSF20 vertical spin-freezer is designed to spin-freeze single standard Medical Research Council or similar bottles. Refrigerated storage space is provided for twenty bottles after freezing. The plant consists of a



Bottles of shelf-frozen material.

cabinet containing a thermally insulated chamber — divided into two compartments—and a refrigerator for cooling the chamber. One of the compartments contains industrial alcohol or some other liquid to provide a freezing bath. The other is for storage. Both compartments are fitted with lids; that over the industrial alcohol has an aperture through

which fits the shaft of an external electric motor. The shaft terminates in a knurled and threaded chuck to hold a bottle in a vertical position immersed in the freezing bath. The motor rotates the bottle at speed so that a cylindrical cavity is produced within the liquid and the eventual surface area of the frozen material is effectively increased.

In the model 51(T) shelf or tray dryer the material to be dried is placed in trays or small bottles on the shelves; up to 1,000 bottles 1-in. diameter and 3-in. high can be accommodated with all five shelves in position. For freezing the material within the shelves there are refrigerated pipes which are coupled to the condenser refrigerant circuit.

DEIONISING EQUIPMENT:

Production of "Purified Water"—the Modern Equivalent of Distilled Water

SINCE the 1955 Addendum to the British Pharmacopœia became official on March 1, 1956, water purified by ion exchange has been given equal recognition with distilled water for the preparation of all pharmacopœial products except injections. The monograph on distilled water which has appeared in every edition since the first in 1864 is now replaced by one entitled "Purified Water." That monograph permits the use of either distillation or of ion-exchange apparatus for the production of purified water.

Chemical Purity

There is already ample evidence that the chemical purity of deionised water from the mixed-bed type of plant is equal to or even superior to that of distilled water. The two-bed type of plant gives water of lower chemical purity and specific resistance. Water from those plants would not pass the pharmacopœial tests for albuminoid matter and oxidisable matter, but still has a very low mineral content and can be used for many of the purposes for which distilled water was formerly used.

It has also been shown that, provided a correct operating technique is carried out and the plant is regenerated at frequent and regular intervals, the bacterial content of deionised water is very low and the water may even be sterile.

Deionising plants have several advantages over stills. They are very simple to operate and are capable of giving rapidly large quantities of pure water. Regeneration is quite a simple operation and, in areas where the water is very hard, the process is more convenient than using stills which will need frequent descaling. Although the cost of a deionising plant is slightly greater than that of a still, the cost of water produced is considerably less.

Although it has been shown that anion exchange resins can remove large quantities of pyrogens from tap water, none of the plants at present available in Britain is claimed to give pyrogen-free water and the direction of the Pharmacopœia that deionised water must not be used for the preparation of water for injection is probably a wise precaution. It is interesting to note, however, that a plant is on the market in France* which is claimed to give pyrogen-free water suitable for the preparation of injections. Further developments

in this field will be awaited with interest.

A cartridge exchange service is provided to purchasers of Elgastat deionisers. When the cartridge containing the mixed ion-exchange resins becomes exhausted a fresh one is provided by the makers, ELGA PRODUCTS, LTD., ion-exchange division, Railway Place, London, S.W.19, thus removing the burden of regeneration from the user.

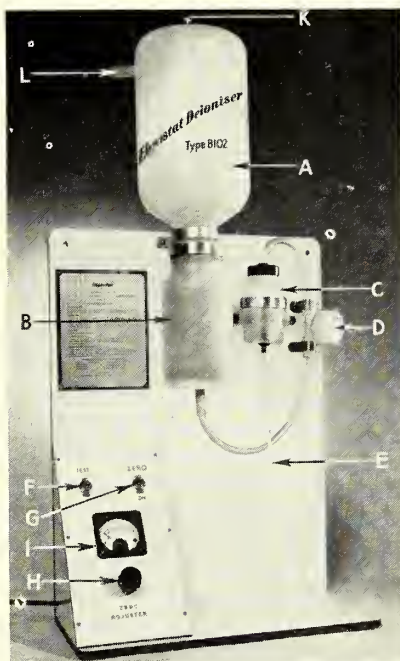
The Elgastat B102 deioniser is a portable and self-contained deionising plant. Its action is instantaneous and the output of cold purified water is up to 3½ gall. (15½ litres) per hour continuously. The deionised effluent is at least equal to triple glass-distilled water and complies with the British Pharmacopœia. A built-in conductivity meter provides a check on the quality of the effluent. The tap or river water passes through a bed of mixed ion exchange resins known as Elgalites. Cations in the crude water are exchanged for hydrogen ions and anions are exchanged for hydroxyl ions on the Elgalites as the water passes through the column

(Monobed method). The resultant hydrogen and hydroxyl ions react with each other instantly to form water molecules. The crude water is poured into the storage tank (A). For convenience a rubber hose may be connected from tap to tank. Deionised water may then be drawn instantly from output pipe (E), by opening flow control valve (D). Flow may be stopped at will by closing control valve. The purity of the effluent which passes through measuring cell (C) may be tested at any time by pressing test switch (F) and observed on conductivity meter (I). The meter is calibrated in ohms/cm. When the Elgalites are exhausted the cartridge can be exchanged within a few seconds by pulling off the base connection, unscrewing cartridge (B) and replacing with new cartridge. Elgalite exchange cartridges are available in standard packs. The quantity of water which can be deionised depends upon the concentration of solids in the crude water and the degree of effluent purity required. In soft water areas one cartridge will deionise as much as 200 gall. (850 litres) whereas the treatment of hard water may use up one cartridge for 8 gall. (36 litres).

The Elgastat type B105 is similar to the B102 model described above. Flow rates of up to 6 gall. per hour are possible. The conductivity meter is energised by an internal B126 dry cell (estimated life of six months). The output per cartridge, depending upon the total of dissolved solids in the raw water, is estimated at 8–75 gall.

The Elgastat major type B104 is a portable and self-contained unit specifically designed for the research laboratory and pilot-scale production. It provides purified water, equal to three distillations in quartz (conductivity water) from tap at flow rates of 75 litres per hour. Two models are available. Where the effluent is required for less critical work, no conductivity meter is provided. The resins embody a colour indicator which shows exhaustion point. Where accurate quality control of effluent is essential, an integral conductivity meter is provided.

The Elgastat minor C403 is a small self-contained deioniser employing a unique indicator which changes its col-



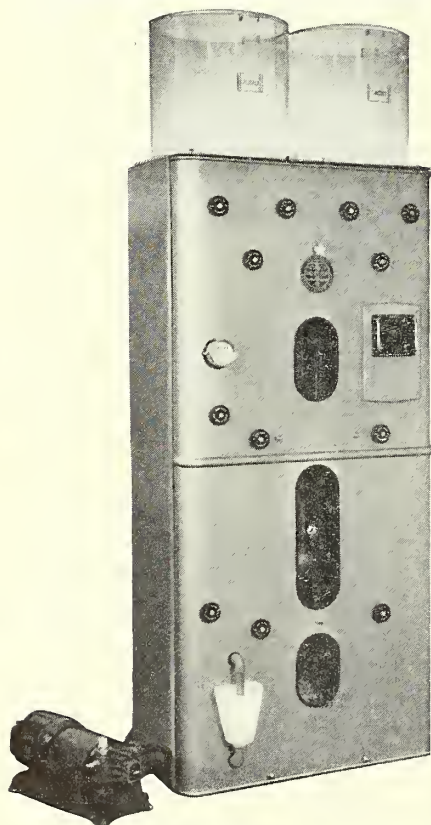
Elgastat portable deioniser B102.

*"La bouteille sagei," Société d'applications Générales des échangeurs d'ions, 28 rue Cambacères, Paris 8.

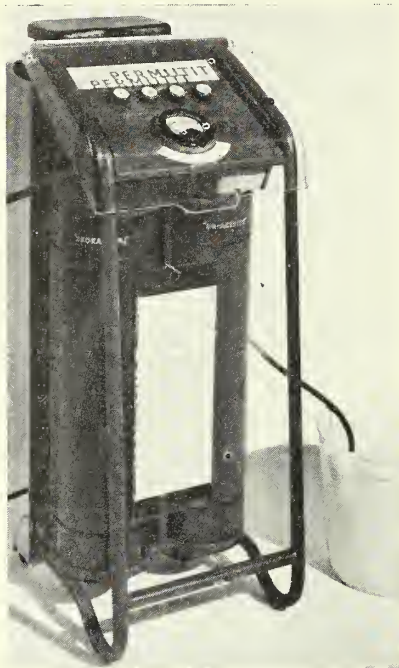
our from blue-black to yellow as the deionising capacity of the Elgalite resins is exhausted. The rate of flow is 10 litres per hour. Water drawn from the Elgastat minor is at least equal to triple-quartz distilled water. The C403 is intended for laboratory use, primarily for the purification of boiler distillate or water delivered by the conventional metal still.

THE PATERSON ENGINEERING CO., LTD., Windsor House, Kingsway, London, W.C.2, provide the Solobed system of deionisation. The two types of resins are mixed together in one vessel. In the smallest unit, that is a transparent plastic cylinder and the valves are polythene or ebonite; the tanks for preparing the regenerant solutions are also made from transparent plastic. In the larger installations, the cylinders are made of steel, lined with acid-resisting material, with windows through which the separation and re-mixing processes can be observed. For controlling the rate of flow and checking the quantity treated, the water is metered on entering the unit and to determine the purity of the water an electrical conductivity meter is provided on the outlet. The instrument can be preset to give audible or visual warning when the resins are becoming exhausted.

The resins are regenerated with dilute acid and alkali solutions. The flow of water is first reversed and since one resin is lighter than the other, that has the effect of separating the two types. Dilute caustic soda is introduced at the top of the unit, passes through the upper resin and out at the interface. That resin is then rinsed with water in the same direction to remove excess alkali.



Solobed deionisation unit.



Portable Deminrolit plant mark IV

Photo, Permutit Co., Ltd.

Dilute hydrochloric or sulphuric acid is then introduced at the interface, passes through the lower resin and out at the bottom of the unit. That is followed by rinse water in the same direction. Finally the resins are remixed by means of compressed air introduced at the foot of the cylinder. The resins mix readily.

For treating water containing organic matter in solution, porous varieties of the resins are employed. Those are unaffected by the impurities, which are washed out during regeneration.

THE PERMUTIT CO., LTD., Permutit House, Gunnersbury Avenue, London, W.4, supply Deminrolit plants for the demineralising of water. They range in size from large fixed installations to small portable units for laboratory use. A pair of small sealed cylinders contain the granular ion exchange resins, and a multi-valve control is used for directing the water through the cylinders in series. The first cylinder contains Zeo-Karb hydrogen ion exchange material, which replaces cations in the water by hydrogen ions; the salts in the water being thus converted to the corresponding acids. The acid water then passes through the De-Acidite material contained in the second cylinder, the acids being absorbed, and treated water is produced which contains only minute traces of the salts originally present in the raw supply. After the rated output of water has been demineralised, the ion exchange materials require regeneration. That is done by flushing the Zeo-Karb cylinder with dilute hydrochloric acid and the De-Acidite with sodium carbonate or caustic soda. The plant is then ready for producing another batch of demineralised water. The output per regeneration varies approximately in inverse proportion to the quantity of soluble salts present in the raw water. When treating thin waters, i.e., those containing only a small quantity of dis-

solved solids, a greater output per regeneration is thus obtained than with water more heavily charged with dissolved solids. To show when regeneration is required, an electrical conductivity tester is provided. The electrical conductivity of water varies with the dissolved solids present. A measure of the conductivity thus gives a reliable indication of the amount of solids which the water contains. Portable Deminrolits are made in two sizes.

The portable Deminrolit mark III consists of the two sealed cylinders containing the ion exchange materials, the multivalve control unit, and the conductivity tester. The multivalve control is mounted on the front of the moulded base; the latter also houses the tester. Flexible tubes are provided for raw water inlet, demineralised water outlet, waste water outlet and regenerating solution inlet. During regeneration, that regenerating tube is connected with an aspirator or any other suitable container provided by the purchaser, in which the acid and soda solutions are prepared. The tester shows that the treated water has been properly demineralised, and also indicates when regeneration is required. It consists of a conductivity measuring cell and electrical controlling auxiliaries, and a pair of signal lamps. One of those lamps remains illuminated as long as the treated water is of good quality, and the other signals when regeneration must be carried out. The mark III portable Deminrolit is made in two types designated E and F. The former, which uses De-Acidite ion exchange resin of medium basicity, produces demineralised water of quality approximately equal to that of commercial distilled water but containing carbon dioxide, and silica equivalent to that present in the raw water. The type F which is supplied with highly basic anion exchange resin, has a lower output than the type E, but produces demineralised water of higher quality, free from silica and carbon dioxide. The hourly output of demineralised water obtainable from the mark III E and F types is approximately 6 gall. The mark III portable Deminrolit is suitable for working pressures up to 50 lb. per sq. in.

The mark IV model is larger than the mark III and gives a larger output. It is mounted on a wheeled undercarriage, and the multivalve control is fixed to a sloping panel which also carries the conductivity tester. A collapsible plastic bag is provided for preparing the regenerating solutions. When not in use, the bag folds neatly away behind the ion-exchange cylinders. The tester is of dial type scaled in conductivity units. It gives a continuous indication of the quality of the demineralised water, and enables the operator to decide from experience the reading at which the water ceases to be of acceptable quality. That is a valuable feature, particularly when a critical process demands the use of demineralised water containing the lowest possible amount of residual dissolved solids. As with the mark III design, the mark IV is supplied in either the E or F type. The hourly capacity of both types is approximately 11 gall. The mark IV portable Deminrolit is suitable for pressures up to 50 lb. per sq. in.

The CHEMIST AND DRUGGIST

For Retailer, Wholesaler and Manufacturer

ESTABLISHED 1859

Published weekly at

28 Essex Street, Strand, London, W.C.2

TELEPHONE CENTRAL 6565

TELEGRAMS: "CHEMICUS ESTRAND, LONDON"

Clearance for an Industry's Progress

THE scheme agreed between the Ministry of Health and the pharmaceutical industry (p. 391) for arriving at the prices to be paid by the State for proprietary medicinal products has the stamp of an eminently reasonable and practicable arrangement.

It is the industry's own. An earlier plan put forward by the Ministry was rejected by the industry as unworkable. The Association of British Pharmaceutical Industry asked leave then to put forward alternative—more realistic—proposals, and negotiations that were entered into over the industry's scheme lasted two-and-a-half years. The proposals were given a try-out on a representative cross-section of the industry, and, as a result, modifications were introduced that enabled the Ministry to accept the scheme, at least for a trial period.

The underlying dilemma from the start was to reconcile the State's need to spend public money wisely and the manufacturers' need to finance research, added to their desire for reasonable freedom to develop on both the home and the export markets. That difficulty has to a substantial extent been overcome. A new product comes under the arrangement only after it has been on the market for three years. During that time it will have had the opportunity to recover for the manufacturer a reasonable proportion of the costs involved in its developing and launching.

All products outside that three-year-limit class—apart from permissive exceptions—will be priced in accordance with one of three provisions. If the product is on sale in overseas markets, "in adequate volume," and is facing international competition, its price in the United Kingdom "will not exceed" the overseas price. What constitutes an adequate volume is not disclosed, but it is understood that a figure has been agreed by both sides; it will no doubt be accessible to any manufacturer who may not be in membership of the Association. A product that is not exported "in significant quantity," but which corresponds to a standard non-proprietary drug, will be priced at not more than the price of the standard drug. If the product does not fall to be priced by either of those methods its price will be arrived at on the basis of an ingredient allowance (based on recognised trade prices) and on processing and packaging allowances "according to a schedule covering different types of product."

By whatever method arrived at, the price will be a maximum one. If it is less than at present it takes effect immediately. If it works out above the present price, the price will not be increased for that reason. In

"special cases"—and where a manufacturer prefers it that way—a fair and reasonable price may instead be negotiated with the Ministry.

Thus comes to an end a long period in which a great deal of criticism has been levelled at the industry without much opportunity to counter it. That has been damaging to British manufacturers, who now know where they are and can go ahead in confidence. The scheme takes effect initially for three years but, provided manufacturers behave temperately in operating the scheme, it is probably here to stay.

A Private Preserve?

SINCE the Pharmaceutical Society was granted its Supplemental Charter, which gave the Council—perhaps too easily—virtually all the powers it sought, ordinary members have counted for less and less in its affairs. Their principal functions seem nowadays to be to provide an income, and to serve as material upon which the Law Department can get to work.

It is not long since the School of Pharmacy, University of London, vacated the examination hall at No. 17, and the hall, under architectural supervision, was tastefully redecorated prior to reoccupation by the Society. Members of the rank and file who had been regular attenders at Evening Meetings in London looked forward to some release from the cramped, scholastic conditions of the old lecture hall and some enjoyment of the new Paradise. But, no! Rather than that the hall should be desecrated the meetings were guillotined.

True, members were provided with a new waiting room at the Society's headquarters, but that in itself may have been symbolic, since in any context a waiting room is for outsiders with no rights or privileges in the building as a whole.

More recently (see p. 417) a benefactor has presented the Society with a mace, a most handsome example of the jeweller's craft. Its function is understood to be to lie on the table (symbolism again?) at formal meetings of the Society. The presentation of the mace might have been thought the occasion for a public ceremony, to which all members of the Society able to attend would be welcome guests. No, again! The ceremony, such as it was, took place at a private dinner of the Council, with not even members of the Press present, though a "hand-out" and photograph were circulated later (after both had been published in the Society's journal). So far as the other organs of the pharmaceutical Press are concerned, that may not much matter. Out of goodwill and for purposes of record they may still use the material, possibly even with better reproduction quality in the illustration. But with the lay Press a great opportunity for publicity has been thrown away.

Presumably the first use of the mace at a "formal" meeting will be at the Society's annual meeting in May. By the way things have been done the mace will not then promote a shared pride between members and Council. Rather will it emphasise the Council's growing "apartheid" from its members.

When was the wrong turning taken that has led to such estrangement? We trace it back to the time when, in misguided confusion, the Council moved on the one hand against allowing propaganda on behalf of election candidates (on the ground that such propaganda was unseemly and vulgar in the scientific and learned

body the Society was held to be); whilst on the other hand enforcing on Council members a doctrine of "collective responsibility" appropriate to a Party political system (where an alternative "shadow" government is ready to take over after an adverse vote).

Members of the Society are themselves, of course, largely to blame for the widening rift between themselves and their Council. They have done little to insist that Council members seeking re-election shall give an account of their stewardship. They accepted the Supplemental Charter without critically examining it and new by-laws with apparent absence of concern. Only a minority usually trouble to vote in the Council elections.

Soon private members will have another opportunity to show they expect from their Council some spark of a sign of acting in the interests of all pharmacists, not of just cocooning themselves in a comfortable and undisturbed high niche. In May, twelve candidates are offering themselves for seven places. Among those who challenge the outgoing members are thoughtful, energetic and reforming types. Let those who watch with pain as the Society seems to be slipping back to another hibernating period, such as it has had at times in its history, bestir themselves to reactivate their professional organisation.

What the Credit Squeeze Achieved

THE results of the measures taken by the Government at the end of 1955 to restore the country's balance of payments are outlined in the annual *Economic Survey*, 1957, published recently.

The rises in prices and profits during 1956, the survey says, were checked; exports increased much more than imports, and the trade gap was thereby greatly reduced, giving on the balance of payments a surplus—in contrast to the deficit of 1955. Those achievements must, of course, be set against the world trade picture as a whole. Outside the United Kingdom and the United States, industrial production rose as rapidly as in 1955. The increase in Western Europe was of the order of 8 per cent. over the 1955 level.

In the United Kingdom, expenditure on investment by different industrial groups was also higher, with manufacturing industry accounting for the largest increase over 1955. Within that group the chemical and paper and printing industries achieved the largest increases. Output of the chemical industry was also up—by an estimated 3 per cent.

The authors of the survey believe that world markets should continue to expand, though not at the same rate as in 1956. Dollar markets, together with those of European countries, which have been least affected by the oil shortage, will probably expand more than others. As the economic outlook will continue to be dominated by the necessity of maintaining a satisfactory balance of payments success depends on an expansion of exports. British exporters will need "drive and determination if they are to take full advantage of the expanding markets," says the report.

British pharmaceutical manufacturers have made good progress in the export field, but recently there have been signs that the drive has slowed down, if not halted; in 1956 the value of exports was little different from what it was in 1955. Extra business may soon be derived from the market in Australia, where some of

the import restrictions are being relaxed (*C. & D.*, April 6, p. 384), but that should not deter or halt any drive for new and less traditional markets.

Advances in Manufacture

IN the special pages given over this week to machinery, pride of place is accorded to a discussion of the subject of instrumentation, the technique that enables manufacturing plant to be controlled to close limits and thus operated at maximum efficiency for the consistent manufacture of products of uniform quality, a most necessary requirement of the pharmaceutical industry.

There follows material on the comparatively new subject of freeze-drying. A brief outline of the principles involved is followed by a review of a wide range of available equipment.

The section concludes with an outline of the possibilities of producing supplies of "purified water" by ion exchange, a subject on which more and more attention is being focused. The methods are surveyed in the light of the pharmacopoeial requirements, and available equipment is reviewed.

"Essentials of Treatment"

PUBLISHED first as a long series of articles in *THE CHEMIST AND DRUGGIST*, *Essentials of Treatment* is now available as a 218-page companion volume to *Diseases and Remedies*. The book embodies the most up-to-date medical outlook on the treatment of diseases of the digestive and excretory systems, respiratory system, liver, kidneys, thyroid, heart, ear, eye, skin; of diabetes, bacterial infections, burns and scalds, allergic conditions. It discusses problems of fitness under changed routines of existence (as on holidays), and describes applications of pharmacy to surgery. The price is 17s. 6d.

COMPARATIVE VALUES



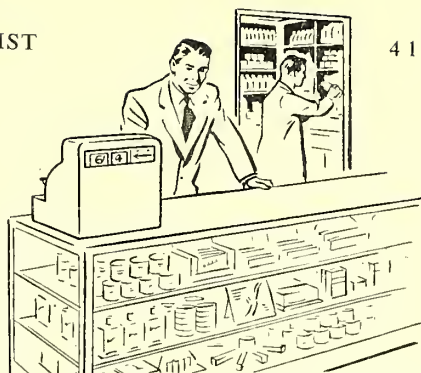
R. Tab. R.....cost approx. 23s.
R. Tab. M.....cost approx. 23s.

If they have to pay the suggested 5s. or 7s. 6d. charge for a doctor's visit (in the event of a "strike"), what will they say then?

“OPEN SHOP”

AN UNSCRIPTED COMMENTARY ON THE SPECIAL PROBLEMS OF THE PHARMACIST IN RETAIL PRACTICE

E. C. TENNER



SO, after all, the “price cutting menace” has received the first blow of what could be a fatally paralysing legal bombardment. The hearty thanks of all of us retailers should go to those manufacturers who are in the spear-head of the attack.

We must remember, however, that one swallow does not make a summer and that, unless all proprietors of cut lines follow suit, the attack will fizzle out. Every price cutter has to be brought to court individually by the manufacturer of each line he “cuts.” We shall be watching now and hoping that, in the next few months, the price cutters we know will be adequately dealt with. I do not think there can be any objection taken if we provide manufacturers with evidence of the cutting of their prices of which they might not otherwise be aware. It is not now disputed that existing gross profit margins in retail pharmacy are often not large enough to allow the proper maintenance of good standards of retail pharmaceutical service and at the same time to provide a proper standard of living for the retail pharmacist himself.

“Unqualified” Competition

Other classes of retail traders who at present also sell these same price-protected lines do not bear so heavy a burden of “overheads” as the pharmacist. That makes price maintenance even more vital to the interests of retail pharmacists than to those of other classes of retailers. The active and growing competition of the “unqualified” trader to sell, at protected prices, lines traditionally distributed by pharmacists remains to be met after disposing of the danger of price cutting. Here it must be pointed out clearly that those firms which have struck the first legal blow against “price cutting” are certainly not interested in confining the distribution of their medicinal products to pharmacists. In fact, their policies seem opposed to any such rationalisation. There is not yet any legislation in this field except the poisons legislation under which any action can be taken to protect the retail pharmacist. As a retail pharmacist, I was particularly impressed by the following paragraph which I saw in the Spring Issue of *The Chemists' Friend*, and which I make no apology for quoting here:

“In the opinion of our legal advisers, the (*Chemists*) Federation's policy of restricting the sale of medicinal products to the pharmacist is regarded as a commendable object and one upon which they feel they can present a favourable case to the Court. Furthermore, counsel is of the opinion that, if this main principle of the Federation, i.e., the restriction of the sale of medicines to pharmacists, is established and accepted, then the Court must allow some means to control this method of distribution.”

To my mind, the Chemists Federation is thus pointing out to the Pharmaceutical Society and the National Pharmaceutical Union our way forward. The continued activities of those organisations must be directed with determination to obtain “the restriction of the sale of medicines to pharmacists.” I do not believe the N.P.U. and the C.F. now need any urging to go forward together, but I do feel that “The Square” has often given the impression, in spite of its amended Charter, that it imagines commercial matters are beneath its notice, although it is maintained so largely by the retention fees payable by “authorised sellers of poisons” and for “registered premises.” We can all do much in the weeks that remain before the election of the Society's Coun-

cil to impress on the candidates for Council honours that members of the Society regard it as one of the prime duties of the Pharmaceutical Society to be active in establishing the principle of the restriction of the sale of medicines to pharmacists. Year after year the majority of suicides achieve their ends with substances that do not appear in the Poisons List. In May, there will be a new Council and in present circumstances an opportunity will be lost if the Pharmaceutical Society does not state categorically that pharmacy should be the channel entrusted, not only with the distribution of the nation's poisons and National Health Service medicines, but with the distribution of all substances or preparations recommended in terms calculated to lead to their use for the treatment of human ailments.

Vital and Less Vital Matters

It is natural, I suppose, that I should be more concerned with these vital matters of price protection and the distribution of medicines than with the ordering of sun-spectacles and swimming caps this early in the year. The Christmas market will be with us as usual and we can bank on that, but who can be sure of enough summer business to warrant his investment in a four months' supply of “summer” lines? I have given up worrying about the Budget, which will probably be stale news when this is printed, but I have placed my usual monthly orders during March and early April regardless of the possibility of any changes. Perhaps that is because I am convinced that a reduction in the present rates of purchase tax on medicines or toilet articles and cosmetics cannot contribute anything useful to our national recovery. To revert for a moment to sun-specs and swim caps, one does notice that the branded example is more and more becoming the only one it is safe to invest in. Soon, it seems, even those homely familiars will follow brushes into the proprietary-article class.

There is a cloud at the back of my thoughts all the time lately. Somehow I cannot believe it will be a cloud that will materialise into real trouble for my business. I know how hard individual doctors have worked to build their present “lists.” I know, too, many areas where the practitioners are almost equally divided on whether or not they should withdraw from the National Health Service. I remember the “club” medicines of the past. I know all the difficulties that would face the staging of a 100 per cent. withdrawal of pharmacists from the Service and the uselessness of anything less than 100 per cent., and I'm sure the same difficulties face the doctors. So at present I refuse to take their threat seriously, though I feel that if things really came to a “strike” I would be forced by my bank to hesitate many times before handing out hundreds of pounds' worth of medicines on any contract except that one with the Executive Council. I have read all about 1911, and I remember 1948, so I just won't believe that October 1957 will bring any great upheaval in our arrangements.

A FRESH OUTLOOK ON THINGS: Conversation overheard by a medical representative in a doctor's waiting room in Hull: “No, I never come to t'doctor's at end of t'month—they give yer a prescription and it never tastes same from t'chemist at end of t'month as it does at beginning. Well, it can't, can it?—I mean, I know they shack t'bottles up every day, but it ain't the same as if it were fresh, is it?”

A Chartered Accountant gives answers to ANY BUSINESS QUESTIONS?

My wife runs a business of her own (not a pharmacy) and I am assessed to surtax on her profits as well as my own. In the past financial year, however, her tax office has agreed a loss on her business. Presumably that is a reduction of our total liability and my wife's loss goes against my corresponding profits, now also agreed.

WHERE an assessment to income tax has become final and conclusive for any year, the assessment is also final and conclusive for the purposes of computing surtax. But no allowance or adjustment of liability on the ground of diminished income or loss can be taken into account unless the allowance or adjustment has been previously made for income tax. The loss claim may be carried forward to future profits, or submitted for set-off against other income assessable to income tax. The year in which the loss is utilised in respect of income tax is the year in which the reduction of surtax income is deemed to have taken place. The existence of a loss, etc., does not itself give rise to a reduction of the income on which surtax is charged.

We have taken on additional shop premises under a twenty-one-year lease but, prior to opening, carried out repairs and decorations to put the premises into a proper state of order. Have we a right to claim that the expense of repairs and decorations and also the legal costs should be spread over a period of years? The benefit will, after all, be gained in the years to follow.

WITH new or additional premises the expense of putting them into a proper state of repair and decoration prior to starting to trade would not be an allowable charge against the profits of the business, since clearly those profits could not arise until after the opening of the premises. Expenditure may be deducted against profits in respect of sums wholly and exclusively laid out for the purposes of earning the profits of the business and defrayed in the course of it. Pre-opening expenditure is construed as of a capital nature, just as if it were part of the costs of investment in the business. Legal costs, too, would not be a revenue charge but part of the cost of acquisition and, as such, a capital item. It may be considered reasonable to write off the repair and legal costs over the period of the agreement, and to charge each year with its due proportion. Whatever amount is written off to profit-and-loss account, however, is added back to profits to arrive at the adjusted profits for tax assessment.

I have myself executed a simple will in respect of my estate, and wish my son to act as executor. Is there a simple procedure for obtaining probate or would it be difficult to undertake without legal aid?

AN executor may apply for probate at the District Probate Registry. He must produce the will and certificate of death and give full particulars of the property of the estate, together with a list of debts and funeral expenses. The appointment of the executor must be specifically made, as a will that does not give the name of the executor creates the same situation as an intestacy. That is, letters of administration would be required. Sureties under an administration bond would then be called for. They would have to pledge themselves as sureties for the proper administration of the estate by the personal representative of the dead person.

The lease I hold on my shop contains the following two clauses:

(1) *The lessor covenants with the lessee "to well and substantially repair the roofs, main walls, main timbers, main drains and other structural parts of the said premises";*

(2) *The lessee covenants with the lessor "to maintain and keep the said premises and every part thereof and all additions thereto and the landlord's fixtures thereon and the drains pipes sanitary and water apparatus in good and substantial repair and condition. But nothing shall render the lessee liable for any structural repairs to the said premises."*

I would be grateful if you could say who is responsible for:

(a) *Repairs to the shop floor, which is attacked by dry-rot;*

(b) *repairs to the shop window, the inside part of which is attacked by dry-rot.*

It would not be possible to advise on the questions raised without seeing the whole lease and inspecting the premises. It is recommended that you should consult a solicitor and possibly a surveyor. Many complications may be involved in matters of this kind. It is easily possible that the whole liability is not confined to one party or the other.

With a view to limiting my income-tax liability, I am considering making my business into a limited company with myself and my wife as directors. Are there any disadvantages to that course?

THE formation of a limited company entails certain statutory obligations to file returns with the Registrar of Companies and to keep records of transactions as indicated in the Companies Act, 1948. From the standpoint of taxation, directors are employees of a limited company and are liable to Pay-As-You-Earn. If there were a partnership, no question of P.A.Y.E. on the proprietors would arise, each partner's share of profits being taxable under direct assessment (subject to allowances and reliefs). But a limited company receives no personal allowances—for example, earned income relief is not given—and it is also chargeable to tax on its profits wholly at the standard rate in the £. Those profits can, of course, be distributed as directors' fees or remuneration and give each director personal tax allowances. Further disadvantages include the liability to profits tax where profits exceed £2,000 per annum and no right of set-off (if the company should make a loss in any year) against other income of the company's shareholders. The formation of a company, too, is the commencement of a new business, and the cessation of the old. The early and final assessments respectively may be either advantageous or disadvantageous by comparison with those of the one-man business or partnership.

ECHOES OF THE PAST

ENOUGH TO COVER SIXPENCE

From "Primitive Physick: or, an Easy and Natural METHOD of Curing Most DISEASES." (JOHN WESLEY. Fifteenth Edition, London, 1772.)

144. The King's Evil†

550. Take as much *Cream of Tartar* as lies on a Six-pence, every Morning and Evening:
551. Or, drink for six Weeks half a Pint of a strong Decocton of *Devil's bit*: Tried.
552. Or, of *Ground-Ivy*:
553. Or, of *dead Nettles*:
554. Or, of *Colt's foot*: Mean time apply the Herb beaten up with powder'd *Linseed* and *Hog's-lard*, to the Sores; Renewing it twice a Day:
555. Or, Use the *Lime-water* for common drink:
556. Or, the Diet-Drink, as in the Article *Scorbutic Sores*. I have known this cure one whose Breast was as full of Holes as an Honey-comb.
557. Or, set a Quart of *Honey* by the Fire to melt. When it is cold, strew into it a Pound and half of *Quick-lime* beat very fine, and searsed through a Hair Sieve. Stir this about, 'till it boil up of itself into a hard Lump. Beat this when cold, very fine, and searse it as before. Take of this as much as lies on a Shilling in a glass of Water every Morning fasting: an Hour before Breakfast, at Four in the Afternoon, and at going to Bed.
558. Or, take two Spoonfuls of the Juice of *Water-Parsnips*, with two Spoonfuls of *Milk*, every Morning fasting, for the six Summer Months. Two Hours after, breakfast on *Water-gruel* with a little Bread.

→This cures the *Scurvy* in three Months.

† It commonly appears first, by the Thickness of the Lips; or a stubborn Humour in the Eyes, then come hard Swellings in the Neck chiefly; then running Sores.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN DEPUTATION ON SHOPS BILL

Home Office told of Society's objections

THE Home Office has received a deputation from the Pharmaceutical Society and the National Pharmaceutical Union to discuss the Pharmaceutical Society's views on the Shops Bill that had already been put forward in correspondence. That was reported at a meeting of the Council of the Pharmaceutical Society on April 2 and 3. The deputation consisted of the vice-president (Mr. D. W. Hudson) and secretary and registrar (Mr. F. W. Adams) supported by the chairman of the Executive of the National Pharmaceutical Union (Mr. A. Aldington) and the secretary (Mr. H. Noble). The deputation explained and reiterated the Society's objections to the provisions of the Bill that remove the limitation on the sale of medicines on Sundays and extend the free time to be given on a week-day for time worked on Sundays by employed pharmacists.

Privy Council Nominee to Council

THE SECRETARY AND REGISTRAR reported that the Privy Council had appointed Dr. William Lane-Petter to be a member of the Council of the Society in place of Dr. J. A. Giles, retired. Dr. Lane-Petter is director of the Laboratory Animals Bureau of the Medical Research Council.

It was reported that Mr. G. H. Hughes had been appointed chairman of the Establishment and Organisation Committee, Mr. W. S. Howells, chairman of the Finance and Publications Committee. Tributes were paid to Dr. B. A. Young by the treasurer and Mr. Hughes for his work as chairman of the former Establishment and Publications Committee.

THE PRESIDENT welcomed as a visitor at the Council table Mr. W. A. Park (chairman, Executive of the Scottish Department of the Society).

Franco-British Pharmaceutical Commission

The Franco-British Pharmaceutical Commission's report stated that two British lecturers are visiting Montpellier, Clermont-Ferrand and Bordeaux in the week May 5 to May 12. Miss M. A. Burr (a member of Council) is speaking on "How Pharmacy is Organised in Great Britain"; and Dr. L. Saunders (lecturer in pharmaceutical chemistry, School of Pharmacy, London University) is speaking on "Ion-exchange in Pharmacy." Two French lecturers are to visit Leicester, Sunderland and Edinburgh between May 13 and May 19. Mme. Benard-Faugoin is speaking on "The Part Played in the Analytical Field by the French Pharmacist"; and Professor Monet, Nantes, is speaking on "The Medicinal Use of Human Blood and its Derivatives."

The progress of discussions with other pharmaceutical organisations on problems of marketing and dispensing proprietary medicines was reported, and recommendations which had been submitted to all the organisations concerned, containing proposals for the future conduct of the discussions, were approved by the Council on behalf of the Society.

Kenya Pharmacy and Poisons Rules 1957

The Public Services Committee received a memorandum on the Pharmacy and Poisons Rules, 1957, issued in the Colony and Protectorate of Kenya, and the differences between the poisons legislation of Kenya and that of Great Britain were noted. The Council approved a suggestion that a letter should be sent to the Colonial Office offering to Colonial Governments the benefit of the Society's experience in the enforcement of poisons legislation.

A report was given of an informal discussion with the secretary of the General Council of the Press about certain reports and articles on pharmaceutical matters in the public Press which caused the Society concern and difficulty. The discussion would help the Society considerably in its relations with the Press.

The Public Services Committee noted the publication of the Interim Report of the Committee on Hospital Supplies and in particular the references to pharmaceutical supplies.

The Registers

It was reported that in March 1957, twenty-five persons had been registered as "student" making a total of 145 in the current year, against 125 in the same period of 1956. Six former members had their names restored to the Register, and the Council approved recommendations for the restoration of two names that were removed more than ten years ago. Recommendations were also approved for the registration under reciprocity arrangements of one applicant under Section XIX (14) and eighteen applicants under Section XIX (16) of the Society's By-laws. Authority was given for the acceptance of three further applications under the latter By-law on submission of the required documents and payment of the prescribed fees.

Benevolent Fund and War Aid Committee

The Benevolent Fund and War Aid Committee's report showed that grants had been made to one widow, three members and one dependant of a member, amounting to £167. Recommendations for grants to two other widows and two members, amounting to £339 were approved. In one case previously deferred, the Council approved the Committee's recommendation for grants of £104 from the Benevolent Fund and £104 from the Orphan Fund. Five grants amounting to £378 for special purposes were made. From the War Aid Fund a grant of £156 to one applicant was approved. Special payments of £8 from the Benevolent Fund and £3 from the War Aid Fund to beneficiaries whose grants expired during March were approved. The quarterly report of the Benevolent Fund showed that, in the first three months of 1957, thirty-three grants were made, amounting to £1,542, against thirty-five grants and £1,702 in the first quarter of 1956. Receipts amounted to £7,360 (subscriptions £5,444), against £7,443 (subscriptions £5,045) in the same period a year ago; and legacies and donations in the quarter were £207, against £2,779 in the March quarter of 1956. The secretary reported the receipt of two legacies to the Benevolent Fund: £50 from the estate of the late Mr. A. Q. Barton, Cinderford, Glos, and £50 from the estate of the late Mr. G. W. H. P. Grainger, Redruth, Cornwall. MR. T. HESELTINE (chairman of the Committee), presenting the list of special contributions, called attention to the large sums received from several branches, and said that he could not refrain from mentioning in particular the item of £80 derived from weighing machines in the Portsmouth district. He did not know who had collected that money, but he would like them to know that the Committee sincerely appreciated the amount of work put into collecting so much by that method. It was reported that the Essex Pharmaceutical Committee had collected £41 with which it wished to purchase a gift for Birdsgrove House in memory of their late secretary, Mr. G. F. Deeth. The warden's report stated that in the month to March 16, 1957, twenty-three guests had stayed at the convalescent home for an aggregate of twenty-three weeks, against twenty-five guests and thirty-nine weeks in the same period of 1956. Seven contributions to supplement weekly payments were received from guests, amounting to £32.

Registration of Foreign Pharmacists

THE SECRETARY AND REGISTRAR reported that, on the expiry of the prescribed period of notice, no observations had been received on the Council's intention to amend Section XIX, Clause 18 of the Society's By-laws (registration of foreign pharmacists) with effect from March 1, 1958 (See C. & D.,

December 15, 1956, p. 663). The Council confirmed the amendment for submission to the Privy Council for consideration.

The Establishment and Organisation Committee recommended, and the Council approved that Dr. J. A. Giles should be selected for election as an honorary member of the Society at the May meeting of Council, and that in the meantime his name should be exhibited in the library in accordance with Section IV (5) of the By-laws.

Representatives on Other Bodies

Mr. G. H. Hughes was appointed as the Society's representative on the governing body of Cardiff College of Advanced Technology. Mr. W. K. Fitch was appointed to attend the fifteenth International Congress of Military Medi-

cine and Pharmacy, which is being held in Belgrade, Yugoslavia, from September 29 to October 5.

On the recommendation of the Finance and Publications Committee, the Council fixed the prices of impending publications as follows:—British Pharmaceutical Codex Supplement, 27s. 6d.; Mathematics and Statistics for use in Pharmacy, Biology and Chemistry, 27s. 6d.

Law Committee

The Committee's report stated that in February 1957, the Society's inspectors and agents visited 1,166 authorised sellers, 247 listed sellers, and 438 drug-store proprietors and similar traders. Seventeen cases of alleged infringements of the Pharmacy Acts were considered, and appropriate action was taken.

PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND

Monthly meeting of Council

THE president (Mr. C. A. Quinn) was in the chair at a meeting of the Council of the Pharmaceutical Society of Northern Ireland held in Belfast, recently. Present were Messrs. W. C. Tate (vice-president), G. E. McIlhagger, W. J. Thornton, W. P. Ewart, W. H. Boyd, S. E. Campbell, C. E. Moss, H. G. Campbell, H. F. Moore, J. Kerr, P. R. W. Shinner, J. Caldwell, R. Gibson, W. Hall, A. Templeton, Professor E. B. C. Mayrs and Mr. W. Gorman (secretary). Apologies for absence were received from Dr. R. G. R. Bacon, Messrs. H. W. Gamble, F. R. Moore, and J. McGregor.

MR. QUINN presented the past-president's badge to Mr. S. E. Campbell, who said that the badge would be a souvenir of a very happy year of office.

MR. GORMAN informed the Council that he had received several copies of the list containing the names of medical practitioners, dentists, pharmacists and midwives whose authorisations under the Dangerous Drugs Act had been withdrawn.

Grant Appreciated

A letter was read from Miss Allen (secretary of the Society of Pharmaceutical Students) thanking the Council for meeting a request from the students' Society for a grant in connection with the students' Easter tour. In her letter, Miss Allen expressed appreciation of the Council's generosity and said that she hoped the students would benefit from the tour and return with a wider knowledge of pharmacy.

A letter from the National Farmers' Union was read by MR. GORMAN who said that at the last meeting of the Council the Union had asked if the Society would assist in an attempt to introduce legislation to nullify the decision in the case of *Sharkey v. Werner*. He had written to the Union informing it of the Council's decision, giving the reasons why the Council could not join with the Union in the matter. Replying, the Union said that it appreciated the Society's position. However, the National Pharmaceutical Union had already intimated its support for the N.F.U. and the interests of pharmacists in Northern Ireland would, to that extent, be represented.

The secretary was instructed to write to Cambrian Airways asking if a plane could be chartered for members returning from the British Pharmaceutical Conference on September 7.

The report of the Law Committee, presented by Mr. McIlhagger (chairman of the Committee) was adopted. MR. MCILHAGGER said the Committee had before it the draft of those by-laws agreed upon at a previous meeting. Further amendments were made to those Regulations 22 to 40 of the Society's General Regulations were then considered and certain alterations made. The Committee was advised, said Mr. McIlhagger, that those regulations relating to fees

and charges generally that were made in pursuance of a section in one of the three Pharmacy Acts must remain as Regulations and could not be included in the by-laws.

The board of examiners, in their report on the December 1956 examinations, stated that in Part II there was some improvement in the standard of work in both theoretical and practical sections of the pharmaceuticals examination. In the practical examination some candidates were unable to complete their papers because of bad planning of the work. A tendency to rely on memory, instead of reference to directions in the British Pharmacopoeia or British Pharmaceutical Codex led to errors in the use of sterilisation methods. The examiners stated that in previous reports emphasis had been laid on certain fundamental weaknesses in pharmacognosy both in the written and practical examinations. It was regretted that little or no improvement had been seen. The two best papers in chemistry theory were presented by candidates taking the examination for the first time. The standard reached in physiology was satisfactory. In Part I, physics, out of twenty-five candidates, 56 per cent. passed. Future candidates might find the course more interesting and certainly of much greater value to themselves if some elementary atomic and nuclear physics was introduced. The standard in the zoology theory examination was higher than usual, but the level in practical showed a decline. Most marks were lost in the tests on histology slides—the hardest part of the course. The discrepancy between the theory and practical marks may have been due to the fact that most candidates were "repeats" who may have been working at theory on their own but were unable to revise adequately their practical work. The percentage of candidates passing the botany examination showed some improvement. The practical examination continued to be the main difficulty and it seemed that much more training in that part of the course was required.

Report "Valuable to Students"

MR. QUINN said that the report was valuable to students, and he wondered if there was any way that the Council could make the reports available to them. The report gave a lot of information on the lines on which they should answer the questions, and various defects found in the answers were listed. MR. EWART suggested that when the students were getting their forms from the secretary, they could get a copy of the report on the previous examination. MR. BOYD said copies of the report could be passed to the Associates' Section of the Ulster Chemists' Association whose members were in touch with the students. MR. MCILHAGGER said he would be glad to help in that respect. MR. CALDWELL said the attention of the students should be drawn to the report by their teachers. MR. BOYD said that copies were submitted to the pharmaceutical department

lecturers at the Belfast Municipal College of Technology and he thought that copies of the report should go directly to the students. MR. EWART pointed out that all students were not members of the Association. MR. SHINNER suggested that an arrangement could be made with the College for copies of the report to be attached to one of the notice boards. A copy could also be given to the U.C.A. for display at their offices. The students should be notified where copies were displayed. MR. KERR said that a sore point with students at the College was that there was no notice board for the pharmacy department. THE PRESIDENT said that if a synopsis of parts of the report were prepared, it might meet the requirements. MR. H. G. CAMPBELL agreed and said copies of such a synopsis could be given to the technical schools and the Associates' Section. MR. SHINNER said he did not like the idea of condensing the reports. It would not be very difficult to run off another fifty or sixty copies of the reports. If students could get copies at the Society's office or at the U.C.A. office, it would meet the case. The report was made to the Council, which was a public body, and he therefore did not think the report could be regarded as private. The Council agreed to have further copies of the examiners' report printed and that those should be circulated to the Associates' Section of the Ulster Chemists' Association and to technical schools for circulation to the

pharmaceutical students.

The Council appointed the following examiners for the period ending December 31: *Biology and botany*, Dr. Yolande H. Harrison; *zoology*, Mr. R. V. Gotto; *physics*, Dr. A. Stewart; *chemistry*, Mr. H. H. Campbell; *pharmaceuticals and forensic pharmacy*, Mr. F. R. C. Bateson; *pharmacognosy*, Mr. G. Rattray; *physiology*, Dr. R. F. Whelan.

Mr. R. M. Watson was appointed druggists' representative on the Council in succession to the late Mr. James Irwin.

MR. S. E. CAMPBELL said it had been the custom for a number of years to hold a Council meeting in Londonderry annually and alternately for the Council to be the guests of the Londonderry and Strabane Chemists' Association and vice versa. This year, the local secretary (Mr. S. E. Taylor) had been more ambitious, and wished to invite representatives from the Dungannon, Omagh and Coleraine areas so that they could meet the president and members of Council. It was proposed that the Council should go by a different route. Instead of going to Inishowen and Green-castle, they should go round the Atlantic Drive. May 16 was fixed as the date.

MR. MCLHAGGER inquired if the code of ethics was given to new graduates. It was agreed that in future new graduates would receive a copy of the code of ethics of pharmacy.

A CEREMONIAL MACE FOR THE BRITISH SOCIETY

Gift of the Wellcome Foundation, Ltd.

A CEREMONIAL mace was presented to the Pharmaceutical Society by the Wellcome Foundation, Ltd., at a dinner of the Society's Council in London on April 2. Mr. Granville Shaw (the Society's president) received the gift from Mr. M. W. Perrin (chairman, Wellcome Foundation, Ltd.). MR. PERRIN recalled the long and close association which has existed between the Society and his organisation, and said that it was a general and ancient custom that bodies such as the Society should possess a mace which could be displayed at formal meetings and contribute to the dignity and the decoration of such events. Knowing that the Society had no such material emblem, it was with pleasure that they had learned in informal discussions that the Council would be prepared to accept one as a gift from the Wellcome Foundation, Ltd. He hoped that when the mace was examined members of the Council would appreciate more the intricate emblems, national, scientific and technical, which made up the design. In conclusion, Mr. Perrin said, "I feel sure that you will all agree on the need to maintain and even, if possible, improve the position of your Society as a learned body if the time-honoured profession of the pharmacist is to keep the recognition it has earned and held." He then handed the gift to Mr. Granville Shaw.

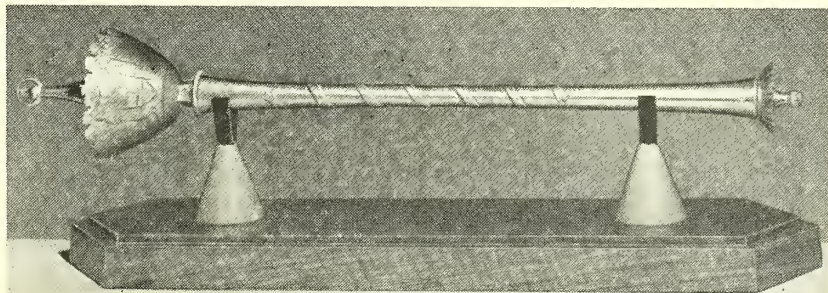
Accepting the mace, THE PRESIDENT said that it was difficult to find words in which to express the gratitude of the Society for the generous and handsome gift. The feelings of members of Council would be shared by all members who would see the gift as a symbol of the goodwill and sympathetic understanding which the Foundation entertained towards the Society. The Society and pharmacy owed much to the work of the Foundation and he was glad to have the opportunity of acknowledging the debt and of express-

ing the warm appreciation of the Society for all that the Foundation had done for it. Also present at the dinner from the Wellcome Foundation, Ltd., were Dr. D. E. Wheeler (managing director), Mr. Leslie Matthews (a director) and Mr. J. H. P. Upton (assistant secretary) and also Mr. C. J. Shiner (designer of the mace), Mr. C. S. Padgett (Padgett & Braham, Ltd., makers of the mace) and Mr. Graham Hughes (art director of the Goldsmiths' Company).

Design of the Mace

The mace is entirely hand-wrought, and is the work of several different skilled craftsmen in London and Birmingham. It is 25-in. long, is made of silver and weighs approximately 40 oz. The arms, inscribed scroll, and the top and bottom finials are fire-gilt, whilst the six motifs below the mace head are in gold. Around the mace head is a gallery of alternate emblems of Great Britain: The rose of England, thistle of Scotland and the leek of Wales. At the front is a full coat of arms of the Society. Below the head are six motifs associated with pharmacy, showing scales, drug jars, pestle and mortar, specie jar, conical measure and a shop round. The shaft is entwined by a gilt scroll, and engraved

with the wording: "Founded 1841: Royal Charter of Incorporation 1843; Supplemental Charters 1901, 1948, 1953." The designs spaced between the scroll are representative of the way in which new discoveries and new scientific methods are utilised to meet the ever increasing demands upon pharmacy and pharmacists:—The antibiotic era represented by *Penicillium notatum*; chemotherapy (a benzene ring and a methane molecule inside, symbolising the aliphatic and aromatic series constituting organic synthetic products); radiochemistry (the radioactive isotope carbon-14 shown structurally); pharmacology (an open book symbolising learning and showing a leaf signifying the use of plants in pharmacy and medicine, and a mosquito symbolising pharmacy in the tropics); research (apparatus used in research laboratories symbolised by a microscope); injection therapy (a group of ampoules). A short description indicates that the mace is "The Gift of The Wellcome Foundation, Limited, 1956." At the top is a conical cover engraved with foxgloves surmounted by a carboy finial. The fleuron terminates in a poppy seed head. The mace is supported upon a stand made of English walnut with rests of cherry wood and black fibre.



NATIONAL PHARMACEUTICAL UNION

Monthly meeting of Executive

THERE was a full attendance at meetings of the National Pharmaceutical Union Executive and related committees held in London on March 26 and 27, Mr. Allen Aldington in the chair. The annual meetings of the Chemists' Defence Association, Ltd., and of the National Pharmaceutical Union were fixed for 12 noon and 12.15 p.m. respectively on Wednesday, April 24.

Shops Bill

It was reported that arrangements had been made for the chairman and secretary to join with Officers of the Pharmaceutical Society in a deputation to the Home Office on March 28 to discuss (a) the provisions in the Shops Bill that affect compensatory holidays for pharmacists employed on N.H.S. Sunday rota duties and (b) certain other aspects of the Bill that are of direct concern to pharmaceutical interests.

Proprietary Medicines

The Executive received and approved a report of a meeting convened by the Pharmaceutical Society on February 20 to discuss the setting-up of a committee on proprietary medicines. In substance, the report recommended the setting up of two committees, each to examine special aspects of the marketing and dispensing of proprietary medicines and to report back to the organisations the committees represented, so that those organisations could take such action as they thought, individually or collectively, to be appropriate. The Executive agreed to appoint representatives to serve on the two committees, but postponed making the appointment until the May meeting.

Purchase Tax

It was reported that, in view of the possibility of purchase tax changes in the impending Budget, there had been informal exchanges of view between representatives of the Union, of other interested trade organisations, and certain retail distributive interests, in an effort to find a satisfactory solution to the problems which confront the retailer when tax rates are increased or decreased. The Executive learned with concern that the discussions had proved abortive.

A memorandum prepared by Mr. H. G. Moss on the operation of a sales tax as an alternative to raising revenue by means of purchase tax was considered and its conclusion that, despite the demerits of purchase tax, it was to be preferred to any form of sales tax that involves assessing the tax due at the point of sale was fully endorsed.

Membership

Thirty-one persons and firms were recorded to have applied to the N.P.U. for membership since the February meeting. They were accepted.

National Health Service

A report by the Central N.H.S. (Chemist Contractors) Committee, presented by Mr. G. H. M. GRAHAM, included the following matters:—

REMUNERATION SURVEY

The management side of the Pharmaceutical Whitley Council had turned down, as impracticable, a shortened form of inquiry into dispensing costs, as proposed by the staff side; the view of the management side was that a full-scale inquiry would be necessary. Proposals as to the nature and scope of that inquiry were promised for an early date.

A letter was read from the Minister of Health's private secretary in reply to representations that the management side of the Whitley Council should be empowered to negotiate a revision in remuneration without the full-scale detailed inquiries that had previously been considered essential. The letter did not exclude the possibility of an interim settlement, but drew attention to the fact that "on more than one occasion the Public Accounts Committee have expressed the view that the relevant facts should be ascertained before any increase in remuneration under the National Health Service is granted."

CONTAINER ALLOWANCE AND UNCOLLECTED LEVIES

A "reasonable response" was reported from the contractors who had been asked to supply information for the container-allowance inquiry. In the inquiry into the extent of non-collection of prescription charges during February, less than half of the contractors had supplied the requisite information; efforts were being made to secure a fuller response.

DRUG TARIFF PRICES

Arrangements for the launching of an inquiry into Drug Tariff buying prices towards the end of April were finalised. Each of the 2,350 contractors in England and Wales who were being approached in the matter would be asked to supply particulars of prices paid and quantities purchased on their most recent purchase of six specified drugs and preparations. In all, information would be sought in respect of thirty drugs and preparations. The Central N.H.S. Committee considered it essential that there should be a full response to the inquiry, and urged, in particular, any chemist who was dispensing a relatively small number of prescriptions, and who was approached in the matter, to co-operate, since the abstention of such contractors might distort the conclusions to be drawn from the facts. That might in turn lead to special disadvantage to the interests of the "small" contractor.

DOCTORS' 'WITHDRAWAL'

Contact was reported maintained with the British Medical Association and Ministry of Health over the repercussions on pharmaceutical interests that would arise in the event of the threatened medical withdrawal coming into effect in October. No further statement would be possible until there had been further clarification of the Government's intentions in regard to settlement of the claim by the medical profession.

DISPENSING FEE SCALE

The co-operation of Pharmaceutical Committees in obtaining up-to-date information on prescribing frequencies for various classes of medicament, was, it was announced, to be sought, so as to supplement information received from the Ministry of Health. The object would be to simplify the existing fee scale, remove anomalies, and ensure, so far as possible, that the National average dispensing fee was maintained at a stable level unaffected by any future changes in prescribing, such as a continuation in the trend towards the prescribing of proprietary preparations.

BRANCH MEETINGS

FINCHLEY

Alone Among Immigrants

ONLY one member at the meeting of Finchley Branch of the Pharmaceutical Society on March 25, could claim to have been born in Middlesex. That was disclosed in reply to the first question put to the members by Mr. G. Peche (honorary editor, Middlesex Quarterly and London County Review) when he addressed the Branch on "Do You Know Your Middlesex." Mr. Peche dealt with the geographical boundaries of Middlesex with special reference to the Barnet area. He said that that area had remained in Hertfordshire because an abbot of St. Albans had been powerful enough to resist a royal demand that it should be merged with the royal hunting ground, Enfield Chase. Brentford had been named by historians as the county town of Middlesex but apart from the fact that elections had been held there, no other evidence existed. According to the Domesday Book there had been thirty-three-and-a-half water mills in Middlesex, one half of one mill being in Buckinghamshire.

NORTH METROPOLITAN

Manufacturers and C.F.

At a recent meeting of the North Metropolitan Branch of the National Pharmaceutical Union, Mr. G. E. MANN (immediate past-president, Chemists Federation) spoke on "The Manufacturers' Point of View and C.F." He reviewed the new constitution and said that C.F. was being registered with the registrar of Restrictive Trading Agreements. The C.F. council believed that the principles of the Federation were in the public interest and awaited with confidence the outcome of the inquiries which would be made by the Restrictive Trade Practices Court. He appealed for even more enthusiasm and active support from retailers. In the ensuing discussion a member complained of slot machines in the London area supplied by and bearing the name of a C.F. wholesaler. A suggestion was put forward by a retail member that C.F. manufacturers should consider combining to advertise on television in a "shop window" type of advertisement. Mr. LAXTON (Branch C.F. secretary) appealed to members to support window display weeks.



Favoured Treatment

THE little luxuries extended to ailing children do not often include an ingratiating medicine. There is a need for palatable and harmless forms of the drugs given to young patients. Aspirin, one of the commonest, is, for instance, one of the most unpleasant, and can be harmful to the delicate gastric mucosa.

On the other hand, most children will readily take aspirin in the form of *Junior Paynocil*. These tablets are really pleasant to take; they disperse instantly on the tongue without water, and minimise the risk of gastric irritation due to aspirin.

Junior Paynocil tablets each contain $2\frac{1}{2}$ grains of aspirin and $1\frac{1}{4}$ grains of glycine. Besides speeding disintegration and eliminating the unpleasant aspirin flavour, glycine confers on each aspirin particle a lubricant, demulcent and protective barrier.

**Junior
PAYNOCIL**

C. L. BENCARD LTD., PARK ROYAL, LONDON N.W.10



Toothpaste
and the
well-informed
customer

Those who think before buying their toothpaste ask for EUTHYMOL. National advertising in the press and in magazines is consistently and powerfully reminding your customers about Euthymol and directing them to the chemist for supplies. Give this publicity your backing by using the attractive showcards and counter displays available — and by continuing to keep your customers *well-informed* about

EUTHYMOL TOOTHPASTE

PARKE, DAVIS & CO LTD · STAINES ROAD · HOUNSLOW · MIDDLESEX · TEL: HOUNSLOW 2361
and at Carfin Industrial Estate, Carfin, Lanarkshire. Tel: Holytown 326/7

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, APRIL 10: Business in all markets during the week was in the doldrums awaiting, it was thought, the outcome of the Budget. The prices of PHARMACEUTICAL CHEMICALS held steady at previous levels although it was believed that some must be advanced shortly to recoup in part the higher manufacturing and distribution costs now prevailing. The B.P. soft PARAFFINS are dearer by from 60s. to 82s. 6d. per ton according to grade.

In CRUDE DRUGS the most prominent feature was provided again by GINGER with Jamaican No. 3 down a further 50s. per cwt. on the spot and shipment by 20s. African material staged a recovery at origin but spot holders did not follow in sympathy and supplies were available ex-warehouse at the same level as c.i.f. quotations. New-crop AGAR was in routine demand on the spot at 12s. 6d. per lb. Chinese STAR ANISE was somewhat scarce and firm on the spot. Prime Cape ALOES and Zanzibar CLOVES were fractionally easier at origin. Other price changes included GUM ACACIA (down 2s. 6d. per cwt.), Brazilian MENTHOL (down sixpence per lb.), CAMPHOR POWDER (down fourpence per lb.) and white SARAWAK PEPPER (up twopence per lb.).

In ESSENTIAL OILS Bourbon GERANIUM continued its firm tone with an advance of 5s. per lb. LEMONGRASS turned a little firmer at origin with spot following part of the advance. On the whole, however, the market for oils was weak and all other changes were against holders. Ceylon CITRONELLA, Madagascar CLOVE LEAF and ANISE were down by threepence per lb.; Brazilian PEPPERMINT by 1s. and CELERY SEED by 7s. 6d.

Pharmaceutical Chemicals

ACETIC ACID. — B.P. glacial 10-ton lots is £104 per ton naked and technical, £91. Carboys are £8 and demijohns, £10 per ton extra.

AMPHETAMINE. — One to 10-kilo lots are: BASE, from 140s. to 160s. as to quantity; SULPHATE is 110s. to 130s. and d-AMPHETAMINE SULPHATE, 405s. to 420s. for similar quantities.

ASPIRIN. — Prices are as follows:—5-cwt. lots, 4s. 7d. per lb.; 1-cwt., 4s. 9d.

BARIUM SULPHATE. — 250-kilo lots of B.P. (x-ray) are now 3s. 2½d. per kilo.

BENTONITE.—Offers of B.P. material are about £70 per ton as to quantity.

CALAMINE.—1-cwt. lots are 2s. per lb.; 5-cwt., 1s. 9d.; 1 ton, 1s. 8½d.

CALCIFEROL.—B.P. is 3s. 2d. per gm. for 2-kilo lots.

CALCIUM GLUCONATE. — Quantities of 3-cwt. and upwards are quoted at 3s. 9d. per lb.; 1-cwt. to 2-cwt., 3s. 10d.

CALCIUM PANTOTHENATE.—Price per kilo is £22 17s. 6d.

CARBOMAL. — B.P.C. is 21s. per lb. delivered in returnable packing.

CHALK.—Prepared powder, B.P., is £22 per ton for minimum 1-ton lots ex makers' works.

CHLORAL HYDRATE. — In 1-cwt. lots the price is about 3s. 10d. per lb. as to holder.

CHLOROBUTOL.—28 lb. lots are at the rate of 10s. per lb.

CHLOROCRESOL.—Pharmaceutical quality is quoted as 7s. 2d. per lb. for 1 cwt. lots.

CHLOROXYLENOL.—B.P. quality is 5s. 3d. per lb. for 1 cwt. lots and 5s. 1d. for 10-cwt.

CREOSOTE.—B.P. quality, ex beechwood, is from 6s. 9d. to 7s. 6d. per lb.

CRESOL.—Price of B.P. quality from distillers is 7s. 9d. per gall. in 5-gall. lots.

DEXTROSE. — Rates are as follows:—MONOHYDRATE, B.P., 1-lb., 1s. 11½d.; 7-lb., 11s. 10d.; 28-lb., 43s.; free packages, less 12½ per cent. to wholesalers. In bulk, 1-ton lots, £90 ex works. ANHYDROUS, B.P., 7-lb., 14s.; 14-lb., 26s. 3d.; 28-lb., 49s. (terms as for monohydrate). 1-ton lots, £107 10s. ex warehouse.

HYDROQUINONE.—Quotations for 1-cwt. lots are 10s. 6d. per lb.

METOL. — In 1-cwt. lots the price is 24s. 6d. per lb.

PARAFFINS.—Prices to wholesale distributors are:— *Liquid*: HEAVY, B.P., £106 12s. 6d. per ton; LIGHT, B.P., £86 10s.; *Technical White* oils, £76 15s. for the LIGHT and £90 5s. for the MEDIUM, all in 40-50 gall. returnable loaned drums, delivered U.K. *Soft*: WHITE, medium consistency is now £110 15s. per ton. WHITE, soft consistency, £107 7s. 6d., and YELLOW, £88 10s. all B.P., in non-returnable drums delivered.

POTASH SULPHURATED. — Lump, B.P.C., is 2s. 4d. per lb. in 1-cwt. lots.

POTASSIUM BICARBONATE. — B.P. powder is 110s. per cwt. for 1-4 cwt. lots and 105s. per cwt. for 5-cwt. and over.

POTASSIUM NITRATE. — Pharmacopœial quality is 1s. 2d. per lb. (crystal, granular or powder) in 1-cwt. lots.

POTASSIUM PERMANGANATE. — Current rate for B.P. material for 1-cwt. lots is 1s. 10½d. per lb. Technical is 197s. 6d. per cwt., and £186 10s. per ton.

PYROGALLIC ACID. — Pure crystals are 20s. 6d. per lb. in 1-cwt. lots.

RESERPINE. — Home price is about 30s. per gm.

ROCHELLE SALT. — Rates (per cwt.) for powder or granulated material are as follows:—In 5-cwt. lots or over, 200s. per cwt., 1-cwt., 202s. 6d. SEIDLITZ POWDER ordinary strength is 160s. 6d. per cwt. in 1-cwt. lots; smalls, from 2s. to 2s. 3d. per lb. Extra strong is 172s. 6d. per cwt., and from 2s. 1d. to 2s. 4d. per lb. for small quantities. Double-strength is 180s. per cwt.; smalls, 2s. 2d. to 2s. 5d. per lb.

SACCHARIN.—In lots of 1-lb. and over B.P.C. powder is quoted at 99s. 10d. per lb., the SODIUM SALT is 80s. 10d. per lb. Prices include duty and carriage.

SODIUM METABISULPHITE. — Granular in 1-ton lots is from £46 2s. 6d. to £50 7s. 6d. per ton according to packing.

SODIUM SULPHITE. — 1-ton lots on the spot of ANHYDROUS (48-50 per cent.) are £66 10s. per ton in 1-cwt. drums or £62 5s. in 1-cwt. bags; CRYSTALS, B.P.C., are £31 15s. per ton in 2-cwt. paper-lined bags. Commercial crystals are from £25 5s. to £27 as to packing.

TARTARIC ACID. — Rates for the home trade are as follows:—10-cwt. lots, 280s. per cwt.; 5-9 cwt., 282s.; 2-4 cwt., 284s.; 1-cwt., 285s.

TEREBENE. — For 1-carboy lots, 4s. 2d. per lb. is asked. In winchesters, prices are from 4s. 3½d. to 5s. 2d. per lb.

TERPINEOL. — Prices of B.P. grade are from 3s. to 3s. 6d. per lb., as to quantity.

THEOBROMINE. — Prices for 1-cwt. lots of ALKALOID are 26s. 6d. per lb. and SODIUM SALICYLATE, 22s.

THEOPHYLLINE.—1-cwt. lots of ALKALOID, ANHYDROUS, are quoted at 20s., and the B.P. at 19s. per lb.; AMINOPHYLLINE is unchanged at 20s. per lb.

THYMOL. — In 7-lb. lots the price is 15s. 9d. per lb. 28-lb., 14s. 6d.

UREA. — Manufacturers' rates for pharmaceutical grade are £63 per ton in 1-cwt. bags non-returnable. Technical quality is £44 10s. per ton.

Alcohol

BRITISH SPIRIT per proof gall.:—

Ethyl Alcohol: (95 per cent. Gay Lussac, 66 o.p.); where the number of proof gall. taken over any one year ended March 31 is 300,000 or over the price is 4s. 6½d.; 200,000 and less than 300,000, 4s. 6½d.; 100,000 and less than 200,000, 4s. 7½d.; 50,000 and less than 100,000, 4s. 7½d.; 10,000 and less than 50,000, 4s. 8½d.; 2,500 and less than 10,000, 4s. 8½d. Prices are exclusive of duty and are for tank wagon lots. In 40-gall. drums there is a surcharge of 1d. per proof gall.

The following grades are subject to a premium on the above prices as follows:—

Absolute Alcohol, 99.5 per cent., 74.5 o.p., 3d. more per proof gall., the special high strength (99.9 per cent., 75.2 o.p.), 5d. more; *Doubly-Rectified Alcohol* (S.V.R.), 95.8 per cent., 68 o.p. is 3d. more and *P.I. Rectified Alcohol*, 96.1 per cent., 68.5 o.p., 8d. more. *R. R. Absolute Alcohol* (re-rectified, 99.7 per cent., 75 o.p.), 15s. 8d. per bulk gall. net.

Methylated Spirits

METHYLATORS' rates per bulk gall. in Great Britain are as follows:—

Industrial Methylated spirit: Strength 61 o.p., 500 gall. and over, 6s. 3d.; 100 gall. and under 500 gall., 6s. 6d.; 30 gall. and under 100 gall., 6s. 9d.; 10 gall. and under 30 gall., 7s. 2d.; 5 gall. and under 10 gall., 7s. 7d. Strength 64 o.p., 1d. per gall., 66 o.p. (B.P.), 2d.; 68 o.p., 2½d. more than the above rates with 74 o.p. at 7s. 1d., 7s. 4d., 7s. 7d., 8s. and 8s. 5d. per gall. for similar quantities. Tank wagon delivery is 1½d. per gall. off list price—minimum, 500 gall. For industrial methylated spirit of standard toilet quality prices are from 7s. 11d. (tank wagon) for 500 gall. to 9s. 4½d. for 5-10 gall. (in drums) of 61 o.p.

Pyridinised industrial methylated spirit: Strength 61 o.p., 500 gall. and over, in one delivery, 6s. 4½d.; 100 gall. and under 500 gall., 6s. 9d.; 30 gall. and under 100 gall., 7s.; 10 gall. and under 30 gall., 7s. 5d.; 5 gall. and under 10 gall., 7s. 10d. Strength 64 o.p., 1d. per gall. more than foregoing rates.

Mineralised methylated spirit: Strength 61 o.p. in one delivery, 100 gall. and under 500 gall., 6s. 9½d.; 30 gall. and under 100 gall., 7s. 0½d.; 10 gall. and under 30 gall., 7s. 5½d.; 5 gall. and under 10 gall., 7s. 10½d. Strength 64 o.p., 1d. per gall. more than foregoing rates.

Methylated resin finish is 3d. per gall. over and *methylated shellac finish* is 1s. per gall. over the prices of pyridinised methylated spirit.

Terms:—Delivered free and carriage paid on returned empties; net cash one month.

Crude Drugs

ACONITE.—Spot supplies of Spanish *napellus* are 3s. 3d. per lb., duty paid.

AGAR.—*Kobé* is 12s. 6d. per lb., duty paid. April-May shipment, 10s. 9d., c.i.f.

ALOES.—Cape prime for shipment is 326s. per cwt., c.i.f.; and spot 350s. Curaçao for April-May shipment is quoted at 390s., c.i.f.

ANISEED (STAR).—Chinese is 160s. per cwt. on the spot.

ANTIMONY.—English 99.6 per cent. is £222 10s.; 99 per cent., £210 per ton.

BALSAMS.—Quotations (per lb.) are:—**CANADA:** Spot value 30s. **COPAIBA.** Para is from 7s. 9d. to 11s., duty paid. **PERU,** 10s., duty paid. **TOLU** (genuine as imported), 26s.; B.P., 17s. 6d., spot.

BUCHU.—New-crop on the spot is offered at 7s. per lb. and for shipment at 6s. 6d., c.i.f.

CAMPHOR.—B.P. POWDER is from 5s. 6d. per lb., duty paid. **TABLETS,** ½-oz. are 5s. 9d., c.i.f. and 6s. in bond.

CAPRICUMS.—East African are from 120s. to 210s. per cwt. on the spot, as to quality.

CARDAMOMS.—Aleppy greens on the spot are 15s. 6d. per lb. and shipment, 14s., c.i.f. No. 1 seed, 22s. per lb.

CHERRY BARK.—Thin natural is from 1s. 10½d. per lb., duty paid, and rossed, 2s., on the spot.

CHILLIES.—Mombasa on the spot are 210s. per cwt., and 195s., c.i.f., for shipment.

CINNAMON.—Ceylon for shipment (c.i.f.) per lb., OOOO, 8s. 6d.; OOO, 8s. 3½d.; OO, 8s. 2d.; seconds, 6s. 4½d.; featherings, 2s. 8d.; quillings, 4s. 5d.; chips, 1s. 1d.

CLOVES.—Zanzibar on the spot are quoted at 3s. 7½d. per lb. Shipment, 3s. 4½d., c.i.f.

COCILLANA.—Bark is 2s. 3d. per lb. on the spot.

GINGER.—African on the spot is 175s. per cwt. and April-May shipment, 175s., c.i.f. Jamaican No. 3 spot, 480s. April-May shipment is 420s., c.i.f.

GUM ACACIA.—Kordofan cleaned sorts are 152s. 6d. per cwt. on the spot; afloat, 137s., c.i.f.

HONEY.—Australian light-amber is 135s. to 140s. and medium-amber, 127s. 6d. to 132s. 6d. Argentine, 135s. to 137s. 6d.; Jamaican, 147s. 6d. to 152s. 6d., all per cwt., on the spot.

JALAP ROOT.—Mexican is from 5s. 6d. to 6s. 6d. per lb. on the spot, according to test.

KARAYA.—No. 1 gum on the spot is now quoted lower at 260s. per cwt. and No. 2 at 215s.

KOLA NUTS.—Jamaican are offered at about 8d. per lb., spot, and 6½d., c.i.f. African, 5½d.

LANOLIN.—ANHYDROUS, B.P., is from 175s. to 190s. per cwt. and HYDROUS, B.P., 150s. to 170s.

LOBELIA HERB.—Spot offers are from 7s. to 7s. 6d. per lb.

MACE.—Whole on the spot is 25s. per lb.

MENTHOL.—Chinese. Spot is 51s. per lb., duty paid; afloat, from 47s. 6d. to 48s., c.i.f., as to position. Brazilian, spot, 42s. 6d., duty paid; shipment, 39s. 6d., c.i.f.

MERCURY.—Price per flask (76-lb.) is £86 on the spot.

NUTMEGS.—West Indian 80's not quoted; sound unassorted, 14s. 3d. per lb.; wormy and broken, 9s. 6d.

ORANGE PEEL.—West Indian bitter quarters are 11d. to 1s. per lb.; Spanish 1s. to 1s. 3d.; thin-cut Tripoli, 2s. 3d.

PAPAIN.—Scarce. East African grade 2 is 28s. per lb., spot; No. 1 nominally 32s. 6d. per lb.

PEPPER.—White Sarawak is 2s. 2d. per lb. on the spot, with prompt shipment at 2s. 1½d., c.i.f. Black Sarawak is offering on the spot at 1s. 8d. per lb., shipment, 1s. 6½d., c.i.f. Black Malabar, 210s. per cwt. on the spot; prompt shipment, 190s., c.i.f.

PEPPERMINT LEAVES.—Dutch for shipment are offered from 2s. 6d. to 3s. per lb., c.i.f.

PIMENTO.—Spot is 590s. per cwt. with forward at 540s., f.o.b.

PODOPHYLLUM.—*Emodi* is 165s. per cwt., c.i.f. *Peltatum*, 4s. per lb. spot, and 430s. per cwt., c.i.f., for shipment.

QUASSIA.—Chips are 42s. 6d. per cwt. on the spot, and 32s. 6d., c.i.f.

QUILLAIA.—Spot offers of bark at 220s. per cwt. with shipment at 175s., c.i.f.

RAUWOLFIA.—*Serpentina* is offered from 4s. 3d. to 4s. 9d., landed terms, as to origin. *Vomitorea* is 2s. 6d., landed.

RHUBARB.—Quotations for Chinese are from 6s. 6d. to 9s. 3d. per lb., as to quality.

SAFFRON.—Mancha Selecta is 280s. per lb., on the spot.

SARSAPARILLA.—Jamaican native red on the spot is 2s. 9½d. per lb., and for shipment, 2s. 8d., c.i.f.

SASSAFRAS.—Selected bark is 5s. per lb.

SEEDS.—(Per cwt.). **ANISE.**—Cyprian, 175s.; Bulgarian, 170s., duty paid, both spot. **CARAWAY.**—Dutch, 115s. duty paid, with very little business passing. **CELERY.**—Indian on spot offered at 187s. 6d. **CORIANDER.**—Spot, Moroccan, 95s., duty paid. Rumanian, 67s. 6d. in bond. Shipment, Moroccan, 65s., c.i.f. **CUMIN.**—Firm. Spot Cyprian, 137s. 6d. Iranian, 132s. 6d., duty paid. **DILL.**—Indian unchanged at 65s., spot. **FENNEL.**—Quiet. Indian quoted at 120s., spot. **FENUGREEK.**—Small business passing in Indian at 70s. and Moroccan at 67s. 6d., duty paid. **MUSTARD.**—English, 60s. to 80s. according to quality.

SENEGA.—Spot is 18s. 6d. per lb. with shippers asking 18s., c.i.f.

SENNA.—*Timevelly* LEAVES are short on the spot. A few prime No. 1 are available at 1s. 5d. per lb., market otherwise bare; PODS, f.a.q., 9½d.; hand-picked, 1s. 3d. to 2s. *Alexandrian* pods available from 1s. 6d. to about 3s. 6d. per lb.; best quality hand-picked not offered.

SHELLAC.—F.O.T.N., 235s. per cwt.; F.O. No. 1, 250s.; fine orange, 275s. to 330s.

SLIPPERY ELM.—Grinding quality bark is 2s. 6d. per lb.

SQUILL.—White is offered on the spot at 57s. to 62s. 6d.

STRAMONIUM.—Indian LEAVES are 70s. per cwt., and European 80s. on the spot.

STROPHANTHUS.—*Kombé* on the spot is 6s. 6d. per lb. for the 100 per cent.; *Gratus* is 11s. 3d., in bond.

STYRAX.—Spot quotations are 6s. 6d. per lb.

TONQUIN BEANS.—Para on the spot are offered at 10s. per lb.

TRAGACANTH.—No. 1 ribbon is £175 to £180 per cwt., No. 2, £150.

TURMERIC.—Madras finger on the spot is 77s. 6d. per cwt. with new-crop, April-May shipment at 60s., c.i.f.

VALERIAN ROOT.—Dutch for prompt shipment is 182s., c.i.f.

VANILLIN.—Rates (per lb.) are:—5-cwt. lots, 27s. 3d.; 1-cwt., 27s. 6d.; 56-lb., 27s. 9d.; smaller quantities, 28s.

WITCH HAZEL LEAVES.—Spot supplies are 2s. 3d. per lb.; prompt shipment, 2s. 1d., c.i.f.

Essential and Expressed Oils

ALMOND.—British oil is 11s. per lb.; imported, 10s. 9d.

ANISE.—Chinese, 12s. 9d. per lb., spot; shipment, 12s. 7½d., c.i.f.

CANANGA.—Spot is from 52s. to 56s. per lb.

CASSIA.—Spot is offered at about 14s. per lb. with shipment, 13s. 6d., c.i.f.

CASTOR.—Minimum charge for home-produced B.P. oil on the spot is now dearer at £188 per ton naked ex mill.

CELERY SEED.—Oil is 100s. per lb. for bulk lots.

CHENOPodium.—Spot value is now 35s. per lb. for original containers.

CINNAMON.—From quillings, English-distilled is quoted at 30s. per oz. Ceylon leaf, crude, 14s. 6d. and rectified, 25s. per lb., spot.

CITRONELLA.—Ceylon, spot, 5s. 9d.; April shipment, 5s. 3d., c.i.f. Formosan, afloat, 7s. 3d., c.i.f., with June-August from 5s. 11d. to 6s. 3d. as to date. Spot is 7s. 6d. in bond.

CLOVE.—Madagascar leaf is 8s. 9d. per lb., duty paid and 7s. 3d., c.i.f. for shipment. Rectified B.P., 17s. 6d.; 87-88 per cent., 11s. 6d. Distilled bud oil, English, from 28s. 9d. to 35s. as to quantity.

CORIANDER.—B.P. oil is quoted from 77s. 6d. to 85s. per lb.

GERANIUM.—Bourbon is from 110s. per lb. on the spot.

JUNIPER BERRY.—B.P.C. oil is from 12s. 6d. per lb. and Jugo-Slavian, 14s. on the spot. English-distilled is 155s. JUNIPER WOOD, from 5s.

LAVANDIN.—Spot is from 14s. to 16s. 6d. per lb. for original drums.

LAVENDER.—French oil is from 55s. to 80s. per lb. as to make.

LAVENDER SPIKE.—Spanish is offered from 12s. 9d. to 14s. per lb. on the spot.

LEMONGRASS.—Spot is 8s. 10½d. per lb., and prompt shipment, 8s. 6d., c.i.f.

ORANGE.—Spot quotations of sweet oil include Floridan at 4s. per lb.; Californian, 9s.; West Indian, 7s. 6d.; South African, 7s.; West African, 16s. 6d. For shipment, proprietary brand Californian cold-pressed, U.S.P., 13s. 2d., c.i.f. Terpeneless is 200s. per lb., spot; and bitter, 21s. 6d. per lb.

OTTO OF ROSE.—Turkish is £250 per kilo.

PEPPERMINT.—*Arvensis:* Chinese is 29s. per lb. on the spot and 28s. 6d., c.i.f. Brazilian, 19s., spot, and 18s., c.i.f. Formosan, May-June, 16s. 9d., c.i.f.; spot, 20s. 3d. Italian "Mitcham"-type oil on the spot is from 52s. 6d.; American, 35s. to 42s. 6d. as to origin.

SAGE.—Spanish is from 8s. 9d. per lb. on the spot and Dalmatian, 90s.

SPEARMINT.—Offers of U.S.P. grade are from 32s. to 34s. per lb. on the spot.

THYME.—Spot is from 10s. per lb., according to content.

UNITED STATES REPORT

NEW YORK, APRIL 9: The price of QUININE SULPHATE was reduced two cents a lb. to a new level of 27 cents, but other quinine salts and the alkaloid were unaffected by the change. GLYCERIN continued to show a mixed tone with demand not so heavy as some trade observers had expected and stocks remaining heavy. PERU BALSAM was higher by 5 cents at \$1.35 per lb. Among ESSENTIAL OILS, Bourbon GERANIUM was higher at \$16.00 (up 75 cents) and the Algerian oil at \$14.75 (up 50 cents), while Formosan CITRONELLA declined to \$1.10, down five cents.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

- From the "Trade Marks Journal," March 27
- For sensitised photographic papers (1)
GEVATONE, 749,205, by Gevaert Photo-Producten, N.V., Mortsel, Belgium.
- For chemical substances for use as emulsifying agents in the course of manufacture (1)
ADVITAMUL, 760,998, by Advita, Ltd., London, E.C.4.
- For all goods (1)
EVOKOTE, 761,203, EVOLINE, 761,247, by Evode, Ltd., Stafford.
- For perfumes, cosmetic preparations and toilet preparations (3)
MOON DROPS, 756,602, by Revlon, Inc., New York, U.S.A.
- For all goods (3)
SUNFRESH, 756,898, by O. R. Groves, Ltd., London, W.1.
- For preparations for tinting and setting the hair (3)
Device of the wording BANDBOX TINT 'N SET, 760,045, by Ashe Laboratories, Ltd., Leatherhead, Surrey
- For preparations for the hair and toilet and for make-up kits comprising such goods (3)
PACER, 758,832, by Thomas Hedley & Co., Ltd., Newcastle-on-Tyne.
- For preparations for removing stains (3)
JANIE, 761,260, by R. S. Cowen Co., New York, U.S.A.
- For pharmaceutical preparations and substances for human and veterinary use (5)
LEPTILANE, 758,064, RITADOR, 761,361, by Ciba, Ltd., Basle, Switzerland. LERIDIN, 759,347, by Organon Laboratories, Ltd., London, W.C.2.
- For all goods (5)
RONTEC, 758,491, by Parke, Davis & Co., Detroit, Michigan, U.S.A., and Hounslow, Middlesex. YEFLA, 761,062, by John Richardson & Co., Leicester, Ltd., Leicester. BISULEX, 761,699, by Imperial Chemical Industries, Ltd., London, S.W.1.
- For fungicides and preparations for killing weeds (5)
ASTEX, 758,771, by Shell Petroleum Co., Ltd., London, E.C.3.
- For pharmaceutical preparations for use in the treatment of the eyes (5)
Device with word CHIBRET, B759,537, by Laboratoires H. Chibret & Fils, S.A., Clermont-Ferrand, France.
- For preparations for killing weeds and plants and their seeds; fungicides, insecticides, germicides, acaricides, bactericides, pesticides, parasiticides, nematocides and preparations for destroying vermin (5)
VAPAM, 758,921, by Stauffer Chemical Co., San Francisco, U.S.A.
- For pharmaceutical and veterinary preparations (5)
DELTALGYCORTIL, 760,011, by Chas. Pfizer & Co., Inc., New York, U.S.A.
- For pharmaceutical preparations and substances (5)
OBLIVET, 760,525, by British Schering, Ltd., London, W.8. GARLODEX, 761,417, by Modern Health Products, Ltd., Chessington, Surrey. BENEVAC, 761,796, by C. L. Bencard, Ltd., London, N.W.10.
- For sodium 2,4-dichlorophenoxyethyl sulphate or use as a herbicide in agriculture (5)
SESONE, 760,624, by Union Carbide and Carbon Corporation, New York, U.S.A.
- For pharmaceutical preparations and substances for human use (5)
PYRGASOL, 760,643, by Dr. A. Wander, S.A., Berne, Switzerland.
- For pharmaceutical preparations in capsule form or use in the treatment and diagnosis of stomach disorders (5)
GASTROLAV, 760,815, by Armour & Co., Ltd., London, E.C.1.
- For pharmaceutical preparations for internal use (5)
PHALDRONE, 761,567, by Philip Harris, Ltd., Birmingham, 3.

For machines for use in the manufacture, preparation, serving, packaging and storing of foodstuffs and beverages (7)

SUNFRESH, 756,899, by O. R. Groves, Ltd., London, W.1.

For industrial chemical apparatus and instruments, etc. (9)

COLASIT, 735,667, by Colasit, A.G., Wimmis, Switzerland.

For gas regulators used in administering therapeutic gases, oxygen tents, humidifiers (for medical use) and surgical sutures (10)

Device with word AIRCO, 751,182, by Air Reduction Co., Inc., New York, U.S.A.

For physical apparatus and chemical apparatus, all for scientific purposes; optical apparatus; and electro-technical apparatus (9)

PRAKTINA, 754,510, PRIOMAT, 754,512, by Veb Zeiss Ikon Dresden, Dresden, Germany.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Monday, April 15

PESTICIDES GROUP, SOCIETY OF CHEMICAL INDUSTRY, 14 Belgrave Square, London, S.W.1, at 5.30 p.m. Annual meeting. Mr. P. Winteringham on "Comparative Biochemical Aspects of Insecticidal Action."

ROMFORD BRANCH, PHARMACEUTICAL SOCIETY, The Unicorn, Gidea Park, Essex, at 7.45 p.m. Annual meeting.

Tuesday, April 16

EAST KENT BRANCH, PHARMACEUTICAL SOCIETY, Falstaff hotel, Canterbury, at 8 p.m. Members' night.

ENFIELD CHEMISTS' ASSOCIATION, George inn, The Town, Enfield, at 7.30 p.m. Mr. J. C. Bloomfield (a member of the Society's Council) on "Pharmaceutical Affairs."

HARROW BRANCH, PHARMACEUTICAL SOCIETY, oak hall, Baptist Church, College Road, Harrow, at 8 p.m. Annual meeting. Consideration of resolutions and amendments for Branch Representatives' meeting.

HERTFORD BRANCH, PHARMACEUTICAL SOCIETY, Mayflower hotel, Hertford, at 8 p.m. Annual meeting.

NORTH STAFFORDSHIRE BRANCH, PHARMACEUTICAL SOCIETY, North Stafford hotel, Stoke-on-Trent, at 7.30 p.m. Annual meeting.

ROYAL PHOTOGRAPHIC SOCIETY, 16 Princes Gate, London, S.W.7, at 6.30 p.m. Formation, if necessary, of proposed Photo-journalism Group.

SOUTH SHIELDS PHARMACISTS' ASSOCIATION, County hotel, Sunderland Road, South Shields, at 7.30 p.m. Captain A. Johnson on "From Little Ships to Big Ships."

WEST MIDDLESEX CHEMISTS' ASSOCIATION and BRANCH, Feathers hotel, The Broadway, Ealing, London, W.5, at 8 p.m. Annual meeting.

Wednesday, April 17

GLASGOW AND SOUTH-WESTERN SCOTTISH BRANCH, PHARMACEUTICAL SOCIETY, Craig's restaurant, 142A St. Vincent Street, Glasgow, C.2, at 7.45 p.m. Annual meeting; motion to change designation of Branch.

LONDON COUNTY PHARMACEUTICAL ASSOCIATION, examination hall, 17 Bloomsbury Square, London, W.C.1, at 7.45 p.m. Council candidates' meeting.

LIVERPOOL CHEMISTS' ASSOCIATION. Meeting postponed.

SOUTH LONDON AND SURREY PHARMACISTS' GOLFING SOCIETY, Croham Hurst Golf Club, South Croydon, at 1.30 p.m. Bogey competition for the Scotia bowl.

Thursday, April 18

CHELTEMHAM BRANCH, PHARMACEUTICAL SOCIETY, Gloucestershire Dairy café, Promenade, Cheltenham, at 7.45 p.m. Annual meeting.

MICROBIOLOGY GROUP, SOCIETY OF CHEMICAL INDUSTRY, 14 Belgrave Square, London, S.W.1, at 6 p.m. Annual meeting. Professor G. Pontecorvo on "Applications of Genetics in Industrial Microbiology."

PRINT AND PUBLICITY

COMMERCIAL TELEVISION

PROGRAMME details are given to enable chemists to put in linking-up displays if they wish. Notice given is as far in advance of the programme date as can be guaranteed by the broadcasting companies.

Sunday, April 21

LONDON: Meggezons cough syrup. Gayelord Hauser yeast tablets. Christy's lanolin face pack. Nervene. Anadin.

MIDLAND: Milton. Brylcreem. Tangee lipstick.

NORTH: Brylcreem.

ALL: Gibbs' S.R. tooth-paste. Max Factor Pan Stik. Lazyshave. Palmolive soap. Tangee lipstick.

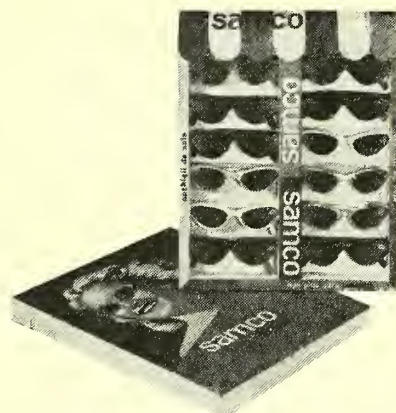
Monday, April 22

LONDON: Beccham's powders. Gibbs' S.R. tooth-paste. Christy's lanolin face pack.

MIDLAND: Milton. Brylcreem. Vaseline hair cream.

NORTH: Beccham's pills. Alka-Seltzer. Brylcreem.

ALL: Anadin.



ITALIAN-DESIGNED DISPLAY UNIT: The space-saving counter display unit for Samco fashion sun-glasses illustrated is being sent out by the sole distributors: D. Harris & Co., Ltd., 73 Brewer Street, London, W.1.

Tuesday, April 23

LONDON: Beecham's powders. Phensic. Vaseline hair cream. Brylcreem. Alka-Seltzer. Tangee lipstick. Christy's lanolin face pack.

MIDLAND: Gibbs' S.R. tooth-paste. Max Factor Pan Cake.

NORTH: Beecham's pills, powders, Zoflora. Alka-Seltzer. Vaseline hair cream.

Wednesday, April 24

LONDON: Veno's cough mixture. Phensic. Gibbs' S.R. tooth-paste. Vaseline hair cream. Brylcreem. Anadin.

MIDLAND: Snowfire wave set. Anadin.

NORTH: Beecham's pills, powders, Veno's cough mixture. Phensic. Vaseline hair cream.



DISTRIBUTION-CUM-DISPLAY: Articulated vehicle in which Kleenex tissues and other products of Kimberly-Clark, Ltd., 11 Grosvenor Gardens, London, S.W.1, are sent out from the factory carries a giant advertisement for the main product.



ALL THE SELLING POINTS: A display stand for the new Ronson Super-trim electric Shaver (Ronson Products, Ltd., 352 Strand, London, W.C.2) incorporates illustrations to drive home at a glance the special features of the instrument.

Thursday, April 25

LONDON: Beecham's powders, Veno's cough mixture, Phensic, Nervone, Brylcreem, Tru-gel, Dr. Wernet's powder.

MIDLAND: Gibbs' S.R. tooth-paste, Tru-gel, Brylcreem, Vaseline hair cream, Anadin, Rozalex barrier cream.

NORTH: Beecham's pills, powders, Veno's cough mixture, Gibbs' S.R. tooth-paste, Zofflora, Dr. Wernet's powder.

Friday, April 26

LONDON: Beecham's powders, Veno's cough mixture, Phensic, Dentilene, D.P. hand cleanser.

MIDLAND: Nervone.

NORTH: Beecham's pills, powders, Veno's cough mixture, Phensic, Gibbs' S.R. tooth-paste, Brylcreem, Tru-gel.

ALL: Anadin.

Saturday, April 27

LONDON: Alka-Seltzer, Meggezons cough syrup, Gayeford Hauser yeast tablets, D.P. hand cleanser.

MIDLAND: Flush, Moorland indigestion tablets, Silvikrin shampoo.



The Nervone display-stand illustrated ties up with a current Television, Press and poster advertising campaign. Comprising dummy carton and stand, it takes up little space. The stand is available free on request from New Era Laboratories, Ltd., Cecil House, Holborn Viaduct, London, E.C.1.

NORTH: Flush, Moorland indigestion tablets, Purosan, Silvikrin shampoo.

ALL: Vita-glucose tablets, Vaseline hair cream, Brylcreem, Anadin, Max Factor Top Secret, Linc-o-Lin beer shampoo.

Other products which are being currently advertised (but for which no day of showing has been notified) include: Swarfega antiseptic hand cleanser.

PRESS ADVERTISING

BEECHAM PHARMACEUTICALS, LTD., St. Helens, Lancs: Phosferinc. In national Press and magazines.

BURROUGHS WELLCOME & Co., 193 Euston Road, London, N.W.1: Saxin tablets. In national newspapers and women's magazines.

C. & D. WEEKLY LIST OF PRICES

A=Advanced; I.R.P.=Inclusive Retail Price; *Tax 30 per cent.; †Tax 90 per cent.

HARTLEYS CHEMISTS, LTD.

	Doz.	I.R.P.
Hill's bronchial balsam*	20 0	2 9
	36 3	5 0

HOWARDS OF ILFORD, LTD. (corrected note)

Borax powder	4 oz.	11 4	1 5
Glauber's salt	4 oz.	10 0	1 3
	8 oz.	12 8	1 7

NEW PRODUCTS AND PACKS

ALLIED LABORATORIES, LTD.

Mycon tablets	12	24 0	3 3
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FASSETT & JOHNSON, LTD., 86 Clerkenwell Road, London, E.C.1: Dabitoft. In national Press.

JOHNSON & JOHNSON (GT. BRITAIN), LTD., Slough, Bucks: Band-Aid dressings. In *Radio Times*, *Woman, Woman's Own*.

KODAK, LTD., Victoria Road, Ruistlip, Middlesex: "Kodak for colour" products. In leading national magazines.

MEGGESON & Co., LTD., Llewellyn Street, London, S.E.16: Meggezons. In national Press.

RONSON PRODUCTS, LTD., Strand, London, W.C.2: Shaver with Super Trim. In *Daily Express* and other national newspapers and magazines.

SUNBEAM ELECTRIC, LTD., East Kilbride, Glasgow: Sunbeam Shavemaster. In national newspapers.

CROWN CAPSULE CO., LTD.

Skin soft skin cream*	2 doz.	1 6
	20 0	

KATHLEEN COURT (ENGLAND), LTD.

Sun oil aerosol†	8 6
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KEEN, ROBINSON & CO., LTD.

Robinson's orange "smash"	3 3
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JOHNSON & JOHNSON (GT. BRITAIN), LTD.

Johnson's foot powder	2 6
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PFIZER, LTD.

Atarax syrup*	Each 4 fl. oz.	10 0	18 0
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C. & D. RETAIL AND DISPENSING PRICE LIST

The drug index for March was 203.4

Cost		Item	4 oz.	1 oz.	1 dr.
d.	per		s. d.	s. d.	s. d.
42	100 mls	Acid. glycerophosphic., B.P.C. ...	—	1 9	0 3
117	25 gm.	Argentum nitras cryst. ...	—	—	3 2
99	5 gm.	Atropin. methylnitras ... S.I.(4)	per	gr.	0 3
84	500 gm.	Aurant. cort. sicc ...	2 9	0 9	0 2
153	500 gm.	Confectio guaiaci co., B.P.C. ...	4 11	1 5	0 3
110	10 gm.	Dexamphetamin. sulph. R only ... S.I.	per	gr.	0 2
132	500 mls	Elixir bromoform ...	—	1 2	0 2
102	25 gm.	Ephedrinae sulphas. ... P.I.(8)	4 3	—	2 9
54	25 gm.	Hyd. iodid. rub. ... S.I. P.II.(4)	—	8 10	1 5
83	100 gm.	Ichthyocolla incis. ...	—	3 4	0 6
197	100 gm.	Macis pulv. ...	—	—	1 2
70	kilo	Mel ... 3s. 9d. lb.	1 2	0 4	—
98	100 gm.	Myristica ...	—	4 0	0 7
101	100 gm.	Myristica pulv. ...	—	4 2	0 7½
41	25 mls	Ol. hippoglossi ...	—	6 2	0 11
48	pt.	Ol. lini ... 4s. 9d. 16 fl. oz.	1 5	0 5	—
240	500 gm.	Potassii iodidum ...	7 10	2 4	0 4
50	25 gm.	Pyrogallol cryst. ...	—	8 4	1 4
62	25 gm.	Quinin. hydrochloridum ...	—	—	1 8
93	5 gm.	Santoninum ...	per	gr.	0 3
84	500 gm.	Sennae fol. Alex. pulv. ...	2 9	0 9	0 2
73	25 mls	Spt. aurantii co., B.P.C. ...	—	3 0	0 5
84	500 mls	Tinct. aloes ...	2 9	0 9	0 2
180	500 mls	Tinct. zingiberis fort. ...	5 10	1 9	0 3
99	500 gm.	Troch. acid. tannic. ...	3 3	0 11	0 2
48	25 gm.	Zinci undecenoat. ...	—	8 0	1 3
69	500 gm.	Zingib. Afric. ...	2 4	0 8	0 2
103	500 gm.	Zingib. Afric. pulv. ...	3 3	0 11	0 2

Cost		TABLETS	Selling Price (in containers)	
d.	per		25	100
252	1,000	Aloes et nuc. vom., B.P.C. ... S.I.(6)	s. d.	s. d.
300	1,000	Aspirin (2½), phenac. (2½) et caffein. (1) ...	1 6	4 3
144	1,000	Cascarae sag. ext., gr. 2 ...	1 8	4 10
312	1,000	Cascarae sag. ext., gr. 5 ...	1 0	2 6
252	1,000	Cascarae co., B.P.C. ... P.I.(13)	1 9	5 0
57	1,000	Digitalis præp. gr. ½ ... S.I.(5)	1 6	4 3
66	1,000	Digitalis præp. gr. 1 ... S.I.(5)	0 11	1 10
162	1,000	Digitalis co., B.P.C. ... S.I.(6)	1 0	1 11
54	1,000	Thyroid up to gr. ¼ ... P.I.(13)	1 3	3 2
			0 10	1 9

The bold letters and figures at left of dispensing price relate to the classification of poisons in THE CHEMIST AND DRUGGIST Poisons Guide.

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SUNTAN

SOLD THROUGH CHEMISTS ONLY



- ELEGANT FORMULA
- PRACTICAL PACK
- CONTEMPORARY DESIGN

Trade Price 15/- per dozen
Display cartons of 6 tubes
Retail 3/- per Tube (inc. P.T.)

Bonus on direct orders:—
13 to the dozen plus
5% on orders for 3 dozen
or 7½% on 6 dozen.

Attractive display card
available on request.

MODERN EQUIPMENT

"WEBSTER'S"
STAINLESS STEELWARE

ISAAC WEBSTER & SONS LTD.
ABBEY WORKS
KIRKSTALL
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51580
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TELEGRAMS
"ISAAC WEBSTER"
KIRKSTALL

SURE-SELLING STOCK!

OVER 150 YEARS REPUTATION
KEARSLEY'S

THE ORIGINAL

WIDOW WELCH'S FEMALE PILLS

Over 10d BOX PROFIT by ordering 1 dozen 4/3 size. Bonus given on every dozen (13). It pays to push this size.

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in the Reign of
King George III

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10th Edition, 1955

Contains numerous additions made since the 9th edition (published 1953), which was completely rewritten. The book is a concise survey of the most modern methods of medicine. It provides pharmacists with a text-book of information on the treatment of diseases and the drugs used. Accepted methods are explained and the medicaments mentioned include some of very recent introduction.

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Large size 18/- per doz. Retail 2/- per bottle.

Small size 13/6 " " " 1/6 " "

Complete with brush for applying the dye.
Less 5% for cash in 7 days.

WHITAKER & CO. (KENDAL) LTD.
DYE AND CHEMICAL MANUFACTURERS—KENDAL

The sedative
action of

TERPACOL

alleviates that irritating dry persistent cough. Formulated to give the full benefit of the sedative action of Codeinæ Phosphas with Terpini Hydras to counteract any side effects.

Tax Free Dispensing
Pack.

Winchesters
50/-d. and 1 lb.
10/6d. each.

Prescribable on
Form E.C.10

*Brook, Parker & Co.
Ltd.*

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TANNIC ACID
AND DERIVATIVES

THE BRITISH DYEWOOD COMPANY LIMITED

19 St. VINCENT PLACE GLASGOW C.1

Greatest success yet in the fast expanding Hair Colouring field!



Sales of COLOR-GLO have exceeded all expectations. There is no doubt that COLOR-GLO advertising—directed at women who have never dared to use hair colouring before—is creating an entirely new market for hair colouring products.

COLOR-GLO is bringing sales to chemists all over the country—results since launching have been phenomenal. Don't hesitate to order adequate stocks. COLOR-GLO users do get the results they are promised. That means they will come back again and again—on the average at least six times a year. This will represent new business—an addition to your turnover. For most COLOR-GLO users are trying out a new kind of product—one they have never bought before.

Display these most attractive full colour packs and link up with the all-the-year-round big space advertising appearing in Woman Woman's Own and women's monthly magazines.

Color-Glo

lasts through 6 to 8 shampoos TRADE MARK

Retail price
4/6 per bottle.
Trade price
22/6 per dozen.
plus 90% tax.

From your usual wholesaler or from:

GOLDEN LIMITED, 7 GROSVENOR STREET, W.I.

Telephone: HYDe Park 1671/6

Trade Enquiries for the Republic of Ireland should be addressed to: Lilmar Pharmaceuticals Limited Santry, Dublin.

CG 5073

Selling in vast quantities throughout the world

LION 9 15 DENIER NYLON HAIR NETS



In film envelopes packed
on this hanging display,
or in counter-display cartons.

... now **NATIONALLY ADVERTISED**
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every month!

No finer quality—no greater seller. It will pay
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From your wholesaler or write us for address of
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London Office: Condor House, St. Paul's Churchyard, E.C.4.
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FOR SMALL REFUSE IS
REQUIRED



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8½" DEEP
WHITE ENAMELLED

23/- EACH
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AN ENCYCLOPÆDIA OF POISONS LAW

The CHEMIST AND DRUGGIST POISONS GUIDE

VOLUME 1
POISONS LIST & KEY

20/- (postage 1/-.)

VOLUME 2
POISONS PROVISIONS
& EXPLANATIONS

40/- (postage 1/6d.)

Compiled and co-ordinated
by W. A. WHATMOUGH, B.Sc., Ph.C., F.R.I.C.

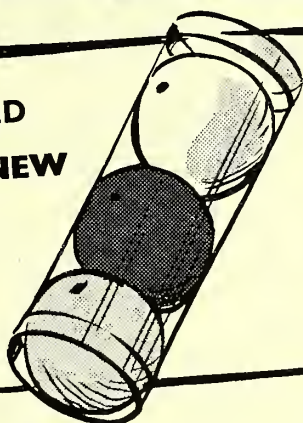
No pharmacist, in whatever branch he is engaged,
can afford to be without these two volumes, which
together form a veritable encyclopædia of poisons
law. They provide complete information on what
the authorised seller of poisons should do in every
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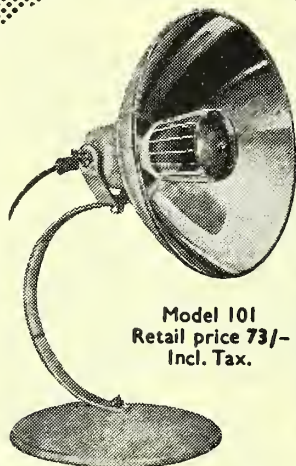
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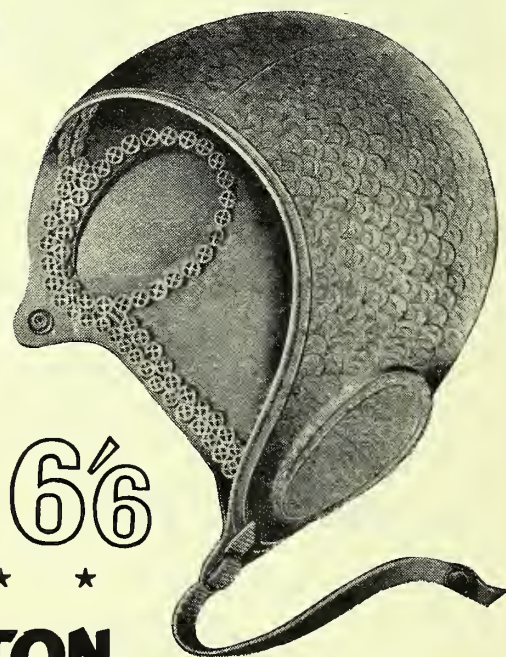
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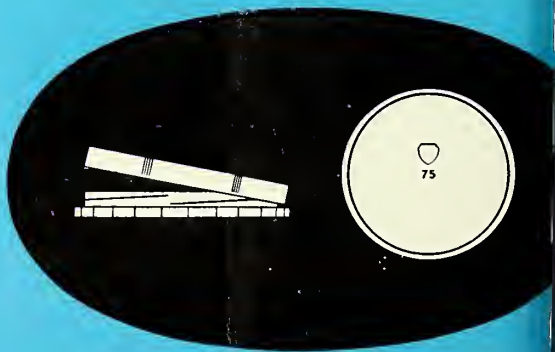


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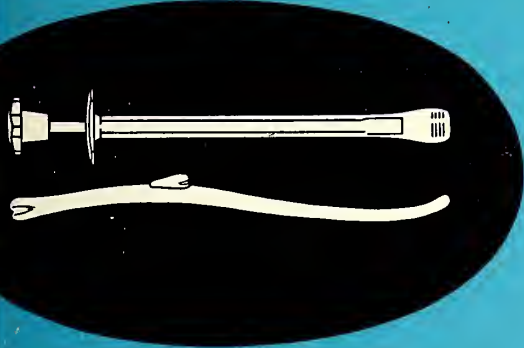
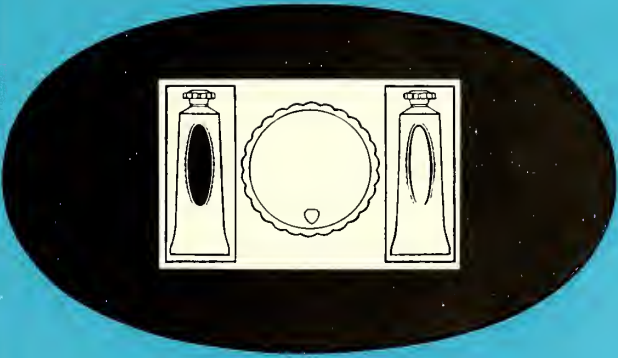
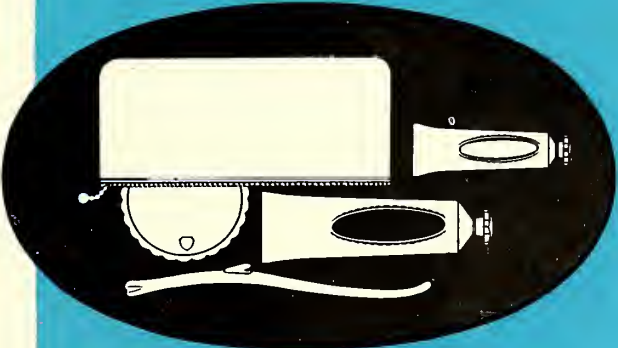
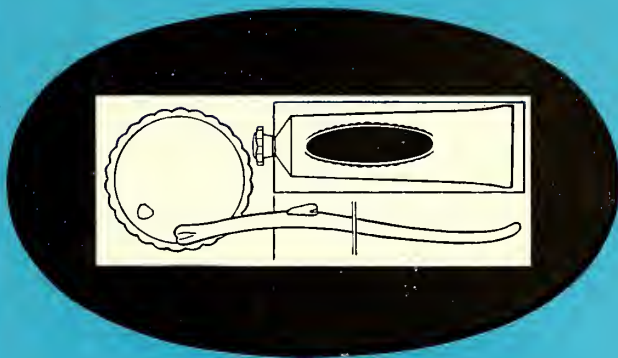
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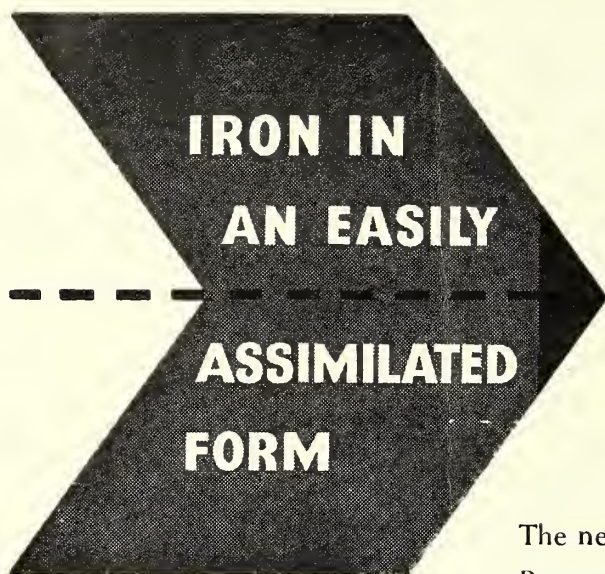
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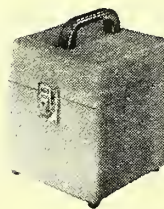
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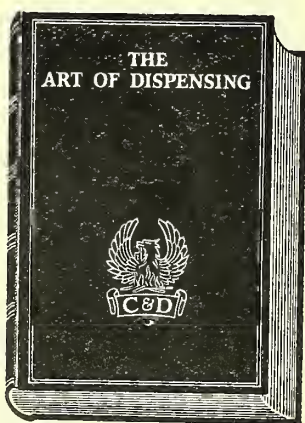
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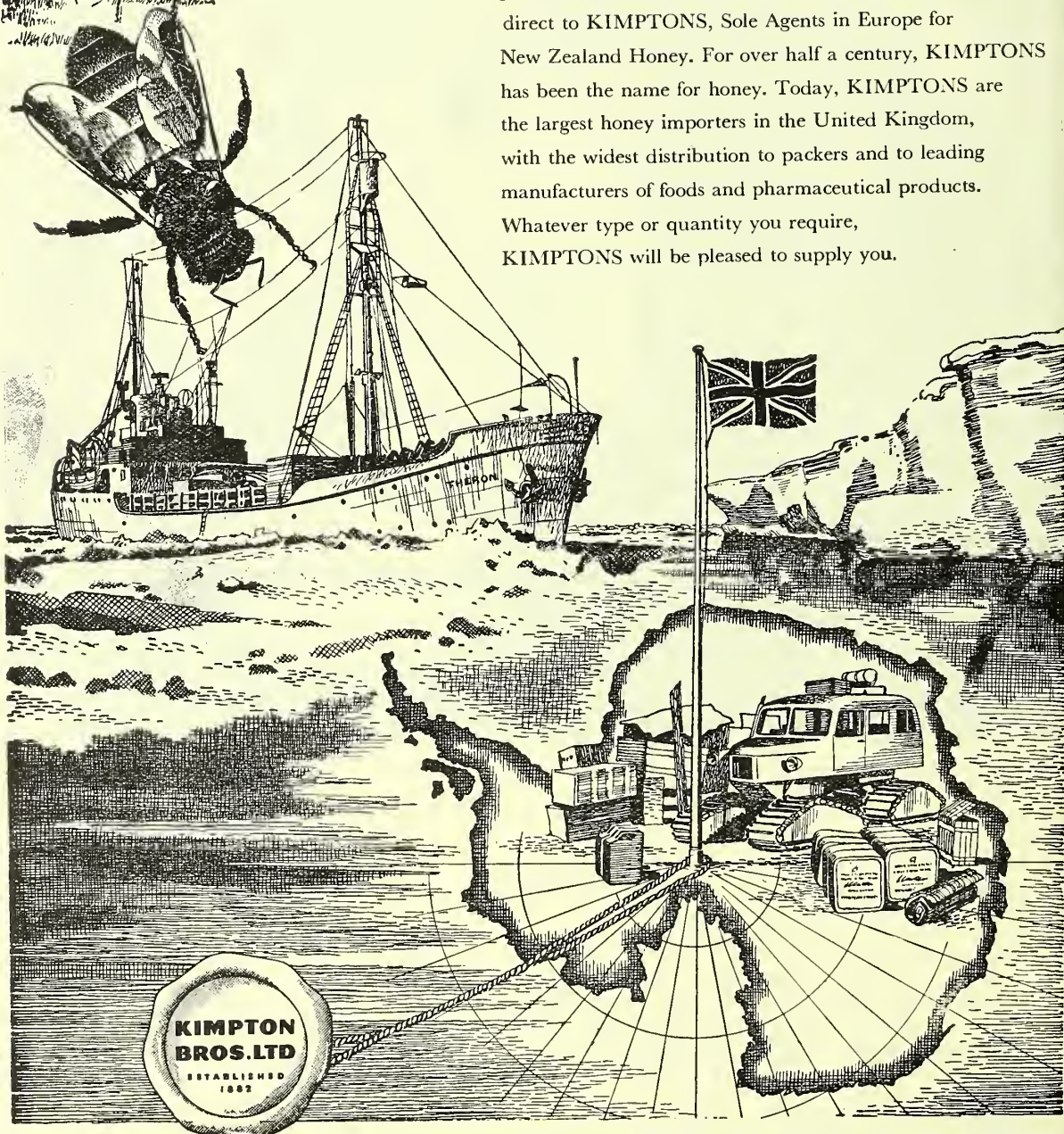
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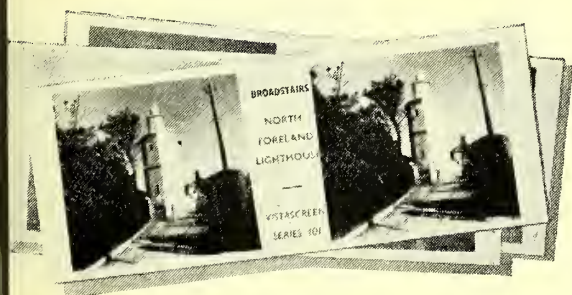
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Locum Pharmacist

required. Rate of pay £16 16s. per week. Apply giving full details and period available to the Group Secretary, Nether Edge Hospital, Sheffield, 11. C 6423

CLARE HALL HOSPITAL, SOUTH MIMMS, BARNET, HERTS

Assistant-in-Dispensing

required. Whitley Council rate of pay, plus London Weighting. Applications to Medical Director. C 322

CLARE HALL HOSPITAL, SOUTH MIMMS, Nr. BARNET, HERTS (405 beds for diseases of the chest)

Senior Pharmacist

required. Whitley Council scale, including London Weighting (also £25 per annum for higher qualification if appropriate). Department serves other hospitals. Applications, stating age, qualifications, experience, and giving names of two referees, to be sent to the Medical Director. C 312

CONNAUGHT HOSPITAL, WALTHAMSTOW, E.17

Locum Assistant-in-Dispensing

Apothecaries' Hall Certificate) required. 27.5.57 to 1.6.57 and 16.9.57 to 28.9.57. £9 11s. 6d. N.W. Apply Secretary, Forest Group H.M.C., Langthorne Road, E.11. C 6454

CRUMPSALL HOSPITAL, MANCHESTER, 8

Pharmacist

vacancy exists. Whitley Council conditions apply. Please apply by letter to the Hospital Administrator as soon as possible. C 6438

KENT AND CANTERBURY HOSPITAL, CANTERBURY

Senior Pharmacist

required for the Group Pharmaceutical Department at the above hospital. This post offers excellent experience in all branches of pharmacy. This department services the Canterbury Group, comprising eleven hospitals with a total of approximately 850 beds. Salary (Category IV hospitals) £650 x £30 (6)—£830 per annum. Higher qualifications allowance payable as appropriate. The Group Pharmacist will be pleased to answer any inquiry either by telephone or letter concerning the duties of the post. Applications with full details and copies of three testimonials to be forwarded as soon as possible to the Group Secretary, Central Office, Nunnery Fields Hospital, Canterbury. C 6443

KENT AND CANTERBURY HOSPITAL, CANTERBURY

Locum Pharmacist

required for Group Pharmaceutical Department August 5 to 31, 1957. The department services the Canterbury Group comprising eleven hospitals with a total of approximately 850 beds. Salary at the rate of 16 guineas per week. The Group Pharmacist will be pleased to answer any inquiry either by telephone or letter concerning the duties of the post. Applications to be made as soon as possible with full details to the Group Secretary, Central Office, Nunnery Fields Hospital, Canterbury. C 6444

KIDDERMINSTER GENERAL HOSPITAL

Assistant Pharmacist

required. Whitley Council scale of pay and conditions of service. Applications, in writing, together with age, experience and qualifications to Hospital Secretary. C 6453

KING EDWARD VII HOSPITAL, WINDSOR

Locum Pharmacist

required, June to August inclusive. Salary by arrangement. Applications to Secretary as soon as possible. C 6382

LONDON JEWISH HOSPITAL, STEPNEY GREEN, E.1

Vacancies for the following staff:

Pharmacist

Salary scale £580 x £30 (6) x £25 (1) to £785 p.a. plus London Weighting. Whitley Council conditions of service.

Assistant-in-Dispensing

Hospital experience essential. Whitley Council salary scale and conditions of service. Also

Locum Pharmacist

required. Rate of pay £16 16s. per week. Applications stating age, qualifications, experience, and the names of two referees, to be sent to the Hospital Secretary. C 6427

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE,

ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER, KENT

Locum Pharmacist

required for three weeks in July or September. Salary 16 guineas a week. Apply to Hospital Secretary, giving full details and dates available. C 6433

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE, ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER, KENT (201 beds)

Pharmacist

required for busy general hospital; good experience. Recognised salary scale and conditions of service. Applications, giving full details of experience and names of two referees, to the Hospital Secretary. C 6434

NAPSBUY (MENTAL) HOSPITAL MANAGEMENT COMMITTEE, Nr. ST. ALBANS, HERTS

Senior Pharmacist

Applications are invited for the above post. £650 x £30—£830. New Pharmacy in course of construction. Applications to the Group Secretary, with names of two referees, endorsed "SENIOR PHARMACIST." C 301

NEW CROSS HOSPITAL, WOLVERHAMPTON (627 Beds—General and Maternity)

Pharmacist

required. Salary Scale £580—£785 p.a. (Starting point according to experience.) Detailed applications with names of two referees to Hospital Secretary. C 6413

ORPINGTON HOSPITAL, ORPINGTON, KENT

Pharmacist

Whole-time or part-time. Whole-time salary £580—£785 p.a. plus London Weighting. Well equipped department with full supporting staff in busy General Hospital.

Assistant-in-Dispensing

Whole-time or part-time. Whole-time salary £170—£490 p.a. plus £20 for approved qualification and London Weighting. Post affords good experience in all branches of Hospital dispensing.

Applicants for either post may visit by appointment. Apply with full details to Physician Superintendent. C 6412

PINEWOOD HOSPITAL, NINE MILE RIDE, WOKINGHAM, BERKS Locum Chief Pharmacist

required from August 26 to September 14. Salary £16 16s. per week. Resident if required. Applications to Secretary. C 6428

ST. ALFEGE'S HOSPITAL, GREENWICH, S.E.10 (Category IV)

Senior Pharmacist

Applications are invited for the above post in a well-equipped department at the above hospital, which may be inspected by arrangement with the Chief Pharmacist. Salary £650 x £30 (6)—£830, plus London Weighting. Whitley Council conditions. Applications to Acting Secretary, G. & D./H.M.C. at above hospital not later than April 29, 1957. C 6446

Appointments—Continued**ROYAL NORTHERN HOSPITAL,
HOLLOWAY, LONDON, N.7****Pharmacist**

required. Whitley salary and conditions. Incremental credit given for National Service or previous retail experience. Within easy reach of Archway and Holloway Road Underground. Application forms from Hospital Secretary.

C 317

STATE OF BRUNEI**Pharmaceutical Chemist**

required for three-year contract. Salary scale (including inducement pay) equivalent to £1,582 rising to £2,604 a year. Commencing salary according to experience. Gratuity at rate £150 a year. Outfit allowance £60. Free passages. Liberal leave on full salary. Arrangements exist for preserving National Health Service Superannuation rights in certain cases. Candidates must be M.P.S. (Great Britain) and have had experience in a hospital dispensary since qualifying; they must also have had experience of large-scale purchasing, stores accounting and stock-keeping. Female candidates must be SINGLE. Write to the Crown Agents, 4 Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3/44040/CD.

C 6449

**ST. LEONARD'S HOSPITAL,
NUTTALL STREET, LONDON, N.1,
CENTRAL GROUP HOSPITAL
MANAGEMENT COMMITTEE****Locum Pharmacists**

required for duties within the Group during periods:—June 10 to 15, August 19 to 24, September 9 to 14. Salary up to 16 guineas per week. Applications to Chief Pharmacist.

C 6455

**ST. LUKE'S HOSPITALS,
BRADFORD, 5****Pharmacist or Senior Pharmacist**

required. General and maternity unit. Whitley Council salary and conditions. Apply Hospital Secretary.

C 6445

**ST. MARY ABBOT'S HOSPITAL,
MARLOES ROAD,
KENSINGTON, W.8****Senior Pharmacist**

required. National salary scale and conditions. Hospital conveniently situated near Kensington High Street and Earls Court. Applications with full particulars and names of two referees to Hospital Secretary (C.D. 15) immediately.

C 6452

**SUNDERLAND AREA HOSPITAL
MANAGEMENT COMMITTEE****Locum Pharmacist**

required immediately for work in various hospitals. Salary 16 guineas per week. Apply in writing to the Group Secretary, General Hospital, Sunderland.

C 6436

**SUNDERLAND AREA HOSPITAL
MANAGEMENT COMMITTEE****Pharmacist**

required for the General and other hospitals. Salary £580 x £30 (6)—£760 x £25 (1)—£785 (if aged 23 or over) Whitley Council conditions. Apply immediately naming two referees, to the Group Secretary, Sunderland Area Hospital Management Committee, General Hospital, Sunderland.

C 6437

**THE MILLER GENERAL
HOSPITAL,
GREENWICH, S.E.10****(180 beds)****Locum Pharmacist**

required for indefinite period in modern department at above hospital. Salary by arrangement. Applications to Chief Pharmacist (Tideway 1136-9).

C 6447

**WEST MIDDLESEX HOSPITAL,
ISLEWORTH, MIDDLESEX****Pharmacist (part-time) or
Assistant-in-Dispensing**

required. Whitley salary and conditions applicable. Applications stating age, qualifications and experience, with names of two referees to Chief Pharmacist.

C 6430

**WHIPPS CROSS HOSPITAL,
LEYTONSTONE, E.11****Locum Pharmacist**

required for approximately five months at Whipps Cross Hospital (general acute beds 974). Salary according to experience at not exceeding £16.16s. per week. Applications giving full details including previous experience to the Hospital Secretary as soon as possible.

C 6448

**WHITTINGHAM HOSPITAL,
Nr. PRESTON, LANCs.****Senior Pharmacist**

(whole-time) required. Commencing salary between £650 and £700 per annum according to experience, rising by regular increments to £830 per annum. Modern pharmacy, good working conditions. Applications immediately to the Secretary.

C 6450

SITUATIONS VACANT**RETAIL (HOME)**

ILFORD. Managing pharmacist required for modern and attractive shop. There will be a substantial salary structure; a good supporting staff and well-equipped dispensary. Permanency with superannuation benefits. Apply, stating full details and when available for interview to Box C 4547.

PHARMACIST (male) required to take charge of busy dispensary (London, S.W.1). Hours 9 a.m. to 5.30 p.m. Sats. 1 p.m. Apply with full particulars to Box 709, Sells, Ltd., Brettenham House, Strand, London, W.C.2. C 319

PHOTOGRAPHIC STAFF. London Co-operative Chemists are desirous of obtaining the services of male or female staff interested in the sale of photographic requisites and cameras. The positions offer progress and promotion and are situated in various suburban districts of London. Application by letter to Photographic Manager, Grange Road, Leyton, E.10, when an appointment will be arranged.

C 4550

RAWTINSTALL (nr.). Private firm has vacancy for keen progressive manager in pleasant busy pharmacy. Adequate efficient staff, and well-equipped spacious dispensary. Basic salary, bonus and profit-sharing scheme yield first-class salary to experienced pharmacist. Optional pension scheme. Three weeks' holiday p.a., plus occasional week-ends. Present manager, after 15 years with the firm, will be pleased to recommend this appointment to prospective applicants. Please give particulars of age, experience, etc., stating availability for interview (expenses paid), to G. T. Espley, M.P.S., 49-73 Daisy Lane, Blackburn.

C 4546

SOUTHALL. A managing pharmacist required for a substantial dispensing business in this area. The shop is attractively fitted with a good supporting staff. Apply with full details, stating when available for interview to Box C 4548.

SOUTH-EAST KENT COAST. Pharmacist required as manager of old-established pharmacy. Permanent. Adequate staff. Flat above business available. Apply with full details. R. G. Hook, Ltd., 101 Dover Road, Folkestone.

C 4555

SURREY. Experienced, unqualified lady assistant required for small private pharmacy. Present staff of proprietor and part-time lady assistants. Please state particulars of previous experience, age, height and salary required. W. S. C. Coleman, Fetcham Pharmacy, Fetcham, nr. Leatherhead.

C 4566

LOCUMS WANTED

ISLE OF MAN. Capable, energetic assistant, unqualified lady or gentleman wanted from end of May to September, usual counter duties with some knowledge of photography. State salary required with reference. Frank Purcell, Photographic Chemist, 97 Strand Street, Douglas.

C 4540

LOCUM PHARMACIST, male or female, May 20 to June 1 inclusive. A. H. Rutt, Ltd., 1 Ye Corner, Oxhey, Watford, Herts, Watford 3193.

C 4563

LOCUM TENENS pharmacist of experience required to undertake several months tour of duties in the London area. Expenses and salary basis. Application in first instance to Chief Pharmacist, London Co-operative Chemists, Ltd., Grange Road, Leyton, E.10.

C 4549

WHOLESALE

APPLICATIONS invited for position of assistant to the Medical Information Officer. The position offers scope for a young man 25/30 years with a medical background. Ability to handle correspondence of a medical and technical nature, and to abstract from medical journals an advantage. Reply with details of education, experience, etc., to Box C 6380.

APPLICATIONS are invited for representative to cover West Lancashire, Cheshire and North Wales. Wide sundries' experience essential in addition to a well-established connection with retail chemists and stores. Remuneration by way of salary, commission, expenses. Applications with full personal details, also whether car owner, in strict confidence to Box C 4560.

A VACANCY OCCURS for a young but experienced representative to promote ethical products to the medical profession and the trade. Based on Edinburgh or Glasgow. Pharmaceutical qualification not essential. Woman considered. Salary and expenses. Car provided. Excellent opportunity for right applicant. Write to Sales Director, Fletcher, Fletcher & Co., Ltd., Holloway, London, N.7.

C 4554

AYRTON, SAUNDERS & CO., LTD.,

invite applications from young men pharmacists for interesting and varied work on sterile products and formulation. Five-day week, canteen, pension scheme.

Applications to Technical Director, Ayrton, Saunders & Co., Ltd., 34 Hanover Street, Liverpool, 1.

C 6410

E. R. SQUIBB & SONS, LIMITED, Manufacturing Chemists, Woodend Avenue, Speke, Liverpool, 19, invite applications for the newly created senior post of Chief Chemist—Development and Formulation Laboratory. Position offers considerable scope to a suitable candidate who should be of degree standard and able to maintain constant high-level liaison with the Parent Company in the U.S.A. Applications should give full details of age, experience, salary required, etc.

C 6416

FERRIS & CO., LTD., of Bristol, require a Pharmacist to take charge of their manufactory. Apply giving full details of experience. C 6432

LEADING IMPORTER/EXPORTER/DISTRIBUTOR has opening for young man as sample clerk, previous experience not essential, but interest in chemistry an advantage. Reply Box C 315.

LEADING EXPERT manufacturers of hairdressers' bulk supplies, require a full-time representative for their existing connection in the Midlands and Northumberland. Applicants must be first-grade salesmen of a high personal standard and must also be "Persona Grata" amongst hairdressers in the areas mentioned. Generous remuneration. Apply for a personal interview to Box C 6396.

**PHARMACEUTICAL GENERAL
COUNCIL (SCOTLAND)
APPOINTMENT OF SUCCESSOR
TO SECRETARY**

Applications are invited from Pharmacists between the ages of 35 and 50 for the post of successor to the Secretary. Salary £1,250—£1,850, by annual increments of £75, with p/acing on the scale according to qualifications and experience.

Application forms and conditions of service may be obtained from The Secretary, Pharmaceutical General Council (Scotland), 36 York Place, Edinburgh, 1.

Completed application forms must be returned not later than May 31, 1957.

C 6418

LEADING MANUFACTURERS of nationally advertised hair preparations require first-class representatives for their Midland and Northern territories. Only applicants giving the fullest details in their first application and who have live connections amongst the trade will be considered. Remuneration will be by way of salary, expenses and commission. The position is an important one and carries good prospects for the enterprising traveller. Box C 4572.

MEDICAL REPRESENTATIVES required for the following areas (1) Staffs and Shropshire (2) South Wales, (3) Notts, Derby and Leicesters; preferably 25-35; personality, enthusiasm and sales ability are prime requirements; pharmaceutical experience an advantage but an interest in medical technicalities and ability to learn quickly are an acceptable alternative; the post entails detailing highest quality pharmaceutical products to the medical profession and servicing the retail and wholesale pharmaceutical trade. Company car provided. Expenses allowed and a pension scheme is operated. Applications in writing, giving fullest details of education and experience, should be addressed to the Sales Manager, Lederle Laboratories Division, Cyanamid of Great Britain Ltd., Bush House, London, W.C.2.

C 320

OLD-ESTABLISHED cork manufacturer requires representatives already calling on chemists. Commission basis only. Box C 4536.

REPRESENTATIVE required to call on store and chemists for well-known brush manufacturer, London area. Please reply in confidence giving full particulars of past experience to Box C 4553.

ROCHE**Medical Representatives**

are required for the following areas:—

1. North London
2. Devon, Cornwall and West Somerset including Bristol

Previous experience not necessary but applicants should hold a pharmaceutical qualification. Applicants with no pharmaceutical qualification should give adequate details of experience, education and/or academic attainment to warrant consideration. Age up to thirty-five years. Usual expenses and salary commensurate with experience. Contributory pension scheme.

Detailed application, which will be treated as confidential, to the Secretary, Roche Products Limited, 15 Manchester Square, London, W.1.

C 6402

SOUTH AFRICA

HILL & MURRAY LIMITED are looking for an Assistant Pharmaceutical Chemist aged 25 to 35 years with a minimum of 3 years manufacturing experience plus a good knowledge of laboratory control work. The successful applicant would be required to supervise all the processing and control of a number of well known international lines. He must be a good organiser and sufficiently responsible to take over factory management from time to time.

Commencing salary £1,000 per annum or more dependent on experience. Tremendous opportunities for advancement for the right man.

Payment of fares to be negotiated. Interviews in London. Please send full particulars in writing to Hill & Murray Limited, c/o Export Trading Services Ltd., 3 Cork Street, Bond Street, London, W.1.

C 6411

Situations Vacant—Continued

PROCESS OPERATIVE, fully experienced, required by medium sized pharmaceutical plant, situated near Rickmansworth. Applicants must have experience in the manufacture of creams and lotions. Apply in writing to Pretested Products, Ltd., Maple Cross Industrial Estate, Rickmansworth. C 6435

REPRESENTATIVE required by firm of manufacturing chemists to call on doctors, hospitals and chemists in connection with ethical pharmaceutical specialities. Territory: Lancashire. Applicants must live on, or near ground. Box C 6442.

ROUSSEL LABORATORIES LIMITED

An executive is required in the bulk sales division. Candidates should be between 27 and 35, and have had experience of both sales and internal administration in the pharmaceutical and/or chemical industry.

This newly created post offers an unusual opportunity to an energetic man wishing to make a career with a rapidly expanding organisation and whose ability and experience justify a four-figure commencing salary.

Applications, with full details of career to date should be addressed to B.S.M., Roussel Laboratories, Ltd., 847 Harrow Road, London, N.W.10. C 6440

REPRESENTATIVE for mid-Surrey wholesale house, chemists' sundries, with connection Surrey, Sussex, Hants. Preference given to one willing to invest with view to taking control. Full particulars. Box C 4537.

REPRESENTATIVES required in all main cities to carry first-class lines in chemists outlets on commission basis with a view to full-time employment if desired. Box C 4574.

SMITH KENDON, LTD.

Owing to the greatly regretted death recently of our Mr. A. E. Noyce, a vacancy occurs for our East Anglian and South-east England territories. Applicants should be capable of earning a four-figure salary and commission, and of maintaining a personal and friendly relationship that has been built up in the territory for many years. Apply with full details of past experience to Mr. D. A. L. Smith, Managing Director, Smith Kendon, Ltd., 132 Borough High Street, London, S.E.1, marking envelope private and confidential. C 4567

SALES REPRESENTATIVE for manufacturing chemists to call on qualified veterinary profession, Northern Counties and Scotland, to take over very well established connection with good prospects of further development. Car and expenses provided with good salary and bonus. Some knowledge of pharmacy and veterinary products essential. Previous experience of representation is very desirable. Apply Box C 6407.

THE BRITISH DRUG HOUSES, LTD., invite applications from pharmacists for the post of Medical Representative in the county of Surrey and the South-west London area. Applications should be addressed to reference HAC/JLH, The British Drug Houses, Ltd., Graham Street, London, N.1. C 6439

TRAINEE REPRESENTATIVE

A trainee is required who is prepared to spend a period in the sales office receiving a comprehensive training in all aspects of medical and pharmaceutical representation.

Pharmacist, single man under 35 preferred, though others with experience and ambition may apply. Free to move to any territory. Commencing salary about £600 per annum, commensurate with experience. Brief details to Home Sales Manager, marked "Confidential."

The Distillers Company (Biochemicals), Ltd.,
Broadway House, The Broadway,
London, S.W.19

C 6429

THREE representatives required for London, home counties and south-east England by a new distributing house with interesting new products in the pharmaceutical trade. Excellent opportunities for right men; salary, expenses and incentives. Box C 4573.

VETERINARY SALES EXECUTIVE

MERCK SHARP & DOHME, LTD., world-wide manufacturers of pharmaceutical specialities of original research will shortly extend their operations to include the Veterinary field. It is intended to appoint a Veterinary Sales Executive who will have the unique opportunity of initiating and developing the veterinary side of the business within the Home Sales Division.

Applications are invited from men having a good veterinary background interested in a commercial career with a progressive Company and who would show initiative and enthusiasm in helping in the promotion of veterinary products to the profession.

The person appointed will be required to undertake travel within the U.K. and will be based at the Company's Headquarters in Hoddesdon, which is in the Green Belt. Progressive salary. The Company have an attractive Pension and Life Assurance Scheme. Applicants should send full personal details to:

Home Sales Manager,
Merck Sharp & Dohme, Ltd.,
Hoddesdon,
Herts.

C 6409

WHOLESALE DRUGGISTS, Lancashire, require manager for proprietary medicine department. Must be fully conversant modern ethical pharmaceuticals, accustomed stock control, ordering, supervising staff. State age, experience, salary required. Box C 6405.

TWO Junior Representatives required by internationally known Pharmaceutical House to undertake special sales promotion activities and to act as relief representatives throughout the United Kingdom. Salary, luncheon allowance and full expenses including use of Company car. Of the successful applicants one will be resident in the Greater London area and the other in Lancashire or the Midlands, but free to travel extensively and aged between 23-28. Previous sales experience not essential as full training given. Exceptional opportunities for young, well-educated men to embark on progressive sales careers. Send full details of experience and educational background to Box C 6415.

WHOLESALE (OVERSEAS)

REQUIRED by departmental store in Ceylon, M.P.S. for wholesale section handling ethical products, some travelling calling doctors, hospitals, etc. Preference bachelor but will consider married man. Good terms, regular U.K. leave, all passages free. Apply Millers, Ltd., 10 Ashley Place, Westminster, London, S.W.1 C 6441

AGENTS WANTED

AGENT with connection in South-west calling on chemists, Photographic dealers, opticians, etc., to offer sunglasses, binoculars and sundries. Good commission. T. Aston, Ltd., 6 Northampton Street, Birmingham, 18. C 4551

SITUATIONS WANTED**LOCUMS SEEKING ENGAGEMENTS**

EXPERIENCED qualified lady chemist (Ireland) available for locums June to September. London area preferred. Phone: Freemantle 7836 or Box C 4569.

WHOLESALE

ACTIVE medical representative seeks more responsible position. 11 years' excellent contacts with the known prescribers of ethicals in Lancashire. Box C 4568.

ADAPTABLE and energetic representative, age 32, 3 years' experience East Midlands and Eastern Counties. Own car. Seeks post with reputable company. Box C 4565.

REPRESENTATIVE, car owner, resident Surrey, desires appointment. Over twenty years' experience calling chemists, drug stores, hairdressers. Well connected S.E., S.W. London, parts Surrey. Box C 4561.

AGENCIES WANTED

REPUTABLE FIRM of manufacturing chemists with first-class connections throughout United Kingdom requires additional lines (packed or unpacked) acceptable to hospital pharmacies, supplies officers, etc. Box C 4516.

SCOTLAND. Well-established agents with excellent connections giving complete coverage at frequent intervals. Retail and wholesale chemists require one more first-class agency. Box C 4552.

DRESTON LABORATORIES

—invites Agents with established connections in the Chemist and Hairdressing trade to carry Dreston Aids to Hair Beauty for the Northern, Midland, and Eastern areas. Liberal commission to live agents.

Apply—DRESTON LABORATORIES, TURNPIKE LANE, LONDON, N.8. C6422

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Your profit — 33 $\frac{1}{3}$ % on each sale!

BUSINESS OPPORTUNITIES

FOOD Manufacturing Firm in London, with up-to-date machinery and equipment and modernised premises, could undertake manufacture of goods for other firms alongside their own production. Please reply to Kent, Brierley & Fisher, 24 Coleman Street, London, E.C.2. C 6431

**Central African
Federation of.**

**Rhodesia and Nyasaland
PHARMACEUTICAL
MANUFACTURE**

Rhomada (Pvt.) Limited seek to acquire additional manufacturing contracts for their manufacturing laboratories in Salisbury, Southern Rhodesia. Laboratories are equipped with modern machinery and are under the control of highly qualified and experienced staff, who can undertake the manufacture of a wide range of pharmaceutical products. Write Box C 6168.

MANUFACTURING AND DISTRIBUTING SERVICE. Well-established house of long standing and excellent reputation prepared to give services for distribution and/or manufacture of an additional nationally advertised cosmetic or toiletry line suitable for the chemists' trade, providing it is not competitive with the lines already carried. Supporting details available of successful operations already being carried out. All enquiries treated in strictest confidence. Box C 4564.

MANUFACTURING CHEMISTS PLANNING EXPANSION. Well-established firm of manufacturing chemists, with freehold factory in London area, equipped with modern pharmaceutical machinery and having considerable development capacity, is planning expansion of business. Owners would consider working arrangement or amalgamation with, or takeover by larger organisation in the pharmaceutical, cosmetic, food and allied industries. Box C 6456.

WANTED

LARGEST CASH BUYERS of photographic equipment of every description, outdated film and paper, etc. Spears, 14 Watling St., Shudehill, Manchester, 4. Phone: Blackfriars 1916. Bankers: Midland Bank, Ltd. C 306

ALL KINDS OF BOTTLES, JARS, SCREW CAPS, cartons, packaging materials and manufacturers' stocks of all kinds bought at fair prices for spot cash. We are buyers of merchandise of EVERY DESCRIPTION, Clearance Stocks, Discontinued lines, Surplus and Redundant Stocks. Should you have anything for disposal, please send us samples and particulars. Reliance Trading Co., 75 Fairfax Road, Swiss Cottage, London, N.W.6. Tel.: Kilburn 0581 and 0038. C 153

WE WILL PURCHASE for cash a complete stock, a redundant line, including finished or partly finished goods, packing raw materials, etc. No quantity too large. Our representative will call anywhere. Write or telephone:—Lawrence Edwards & Co., Ltd., 6/7 Wellington Close, Ledbury Road, London, W.11. Tel.: Bayswater 4020 and 7692. C 140

MISCELLANEOUS SALES

100 BAYS of brand new adjustable steel shelving, 72 in. high by 34 in. wide by 12 in. deep, stove-enamelled bronze green. Sent knocked down—6' shelf bay—£3 15s. Sample delivered free. Quantity discounts. N. C. Brown, Ltd., Eagle Steelworks, Heywood, Lancs. Telephone: 69018. C 6329

CHAMOIS LEATHERS

Full oil tanned, domestic quality, 13 in. x 12 in., 28/- doz.; 67/6 kip (30). 15 in. x 14 in., 44/- doz.; 105/- kip (30). 18 in. x 17 in., 66/- doz.; 160/- kip (30). Individually cellophane wrapped. Order now! County Chamois Co., Ltd., Rocky Lane, Aston Cross, Birmingham. C 6388

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JEWELS
FREE LIST FROM
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LONDON, E.C.3**

C 269

HOLIDAY ACCOMMODATION

CORNWALL. Directly overlooking sea and sheltered bathing cove. Boating, comfortable TV and sun lounges. A.A., R.A.C. Terms 7½ to 10 gns. Young child free from Easter to June. St. Andrews Hotel, Port Isaac. Phone 240. C 4570

MISCELLANEOUS

BETTER DUPLICATE BOOKS at lower prices. Specialist equipment enables us to produce attractive, specially printed duplicate books at amazingly low prices. List free. Browns, Ltd., Caldervale Works, Burnley, Lancs. C 3178

BOTTLING AND PACKING OR PACKING ONLY

Leeds Manufacturing Chemists have surplus capacity April to August. Write Box C 4559.

LABELLING, PACKAGING and dispatch. Excellent facilities for these services at a moderate charge, also advice on presentation. Centrally situated with main road and rail service to all parts of the country. Let us know your problems, we will help you. Box C 4571.

SPECIAL ANNOUNCEMENT. Jodez (Manchester), Ltd., 8 Shudehill, Manchester, 4, cordially invite you to visit our new and extended showrooms at No. 8 and 10 Shudehill, Manchester, 4, where the most comprehensive and exclusive range of imitation jewellery you have ever seen will be on show, including our new and additional lines in leathersgoods, etc. Opening day, Wednesday, April 10, 1957. C 6420

SUPPOSITORY EXCIPIENTS "IMHAUSEN" —in five different grades to suit individual needs —available from Chemical Trading Company, Ltd., 102 Bishopsgate, London, E.C.2. C 300

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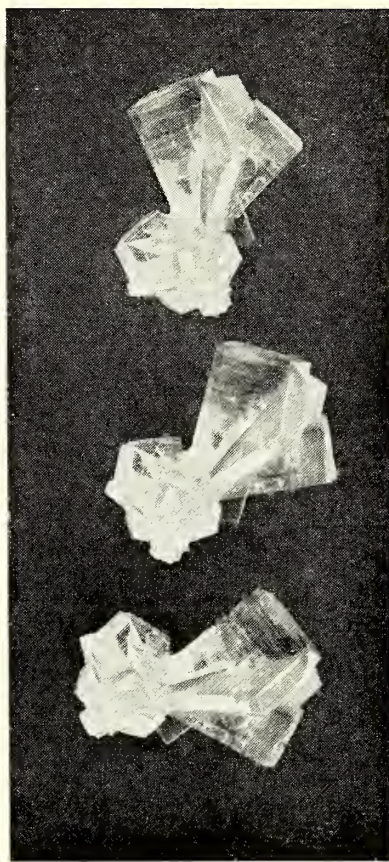
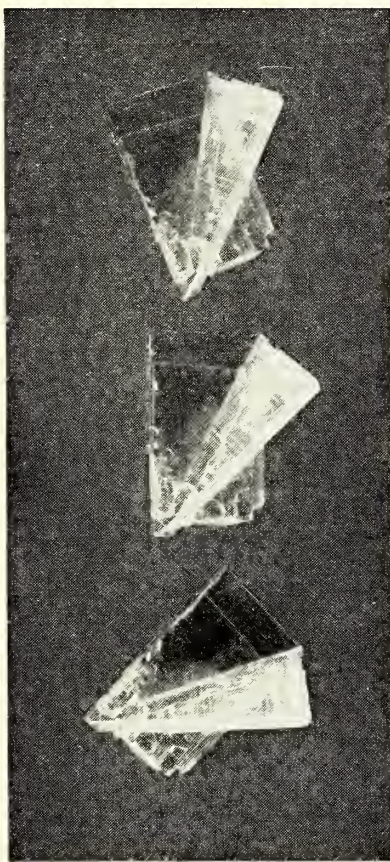
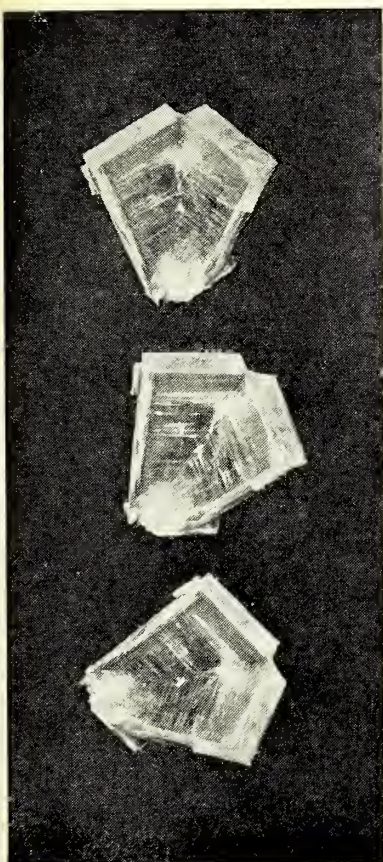
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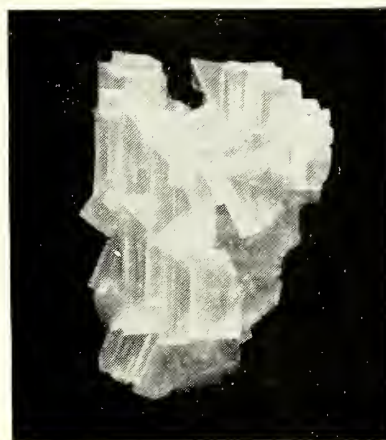
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